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REGISTERED AT THE GENERAL POST OFFICE AS A NEWSPAPER

Vol. 26, No. 9 | Cape Town, 1 March 1952 | Weekly 2s 6d

IN THIS ISSUE

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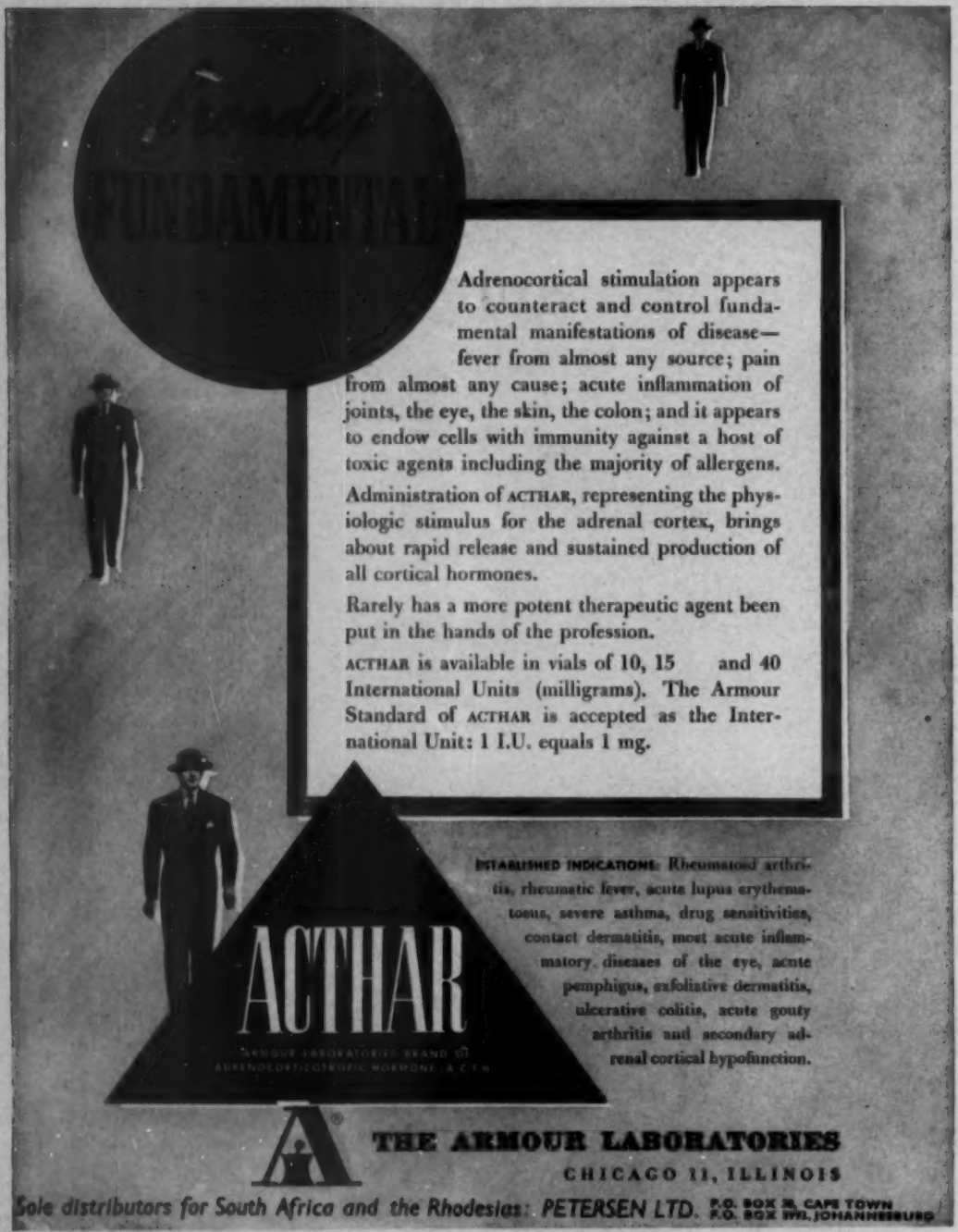
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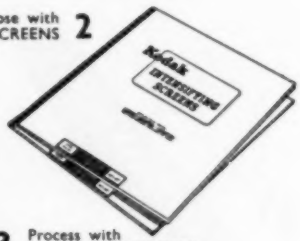

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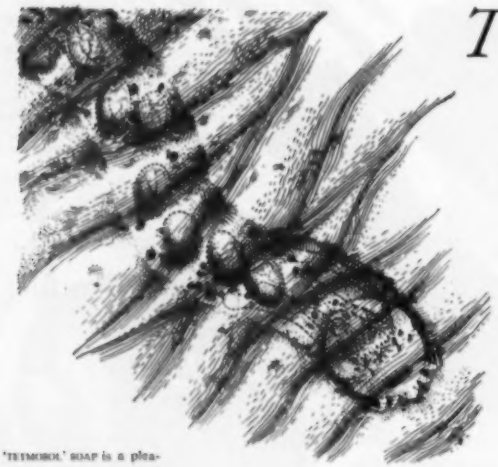

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ESSENTIAL HYPERTENSION

A FIVE-YEAR FOLLOW-UP OF OPERATED CASES *

A. LEE MCGREGOR, F.R.C.S. (ENG.), M.CH. (EDIN.)
Johannesburg

Operations on the sympathetic nervous system behave like a pendulum—they wax and wane in popularity. This is not remarkable as it is noteworthy that except for rare tumours, the system is subject to no diseases. There are but two indications for attacking it:

(a) To vary its activity.
(b) To cut off impulses of pain.

The surgeon is thus put in the unusual position of removing normal tissue. This goes contrary to all his teaching and inclination. Furthermore, in attacking the sympathetic he is trying to alter such a fundamental physiological function as vascular tone. The autonomic nervous system is phylogenetically older than the cerebrospinal one, it subserves subconscious functions on the sum of which life itself depends, functions which by their very nature and importance cannot ever be completely 'amputated'. It is understandable, then, that such operations seldom achieve their objective completely, and though they may bring some measure of relief they rarely effect cure. Thus a sense of disappointment is engendered. Often, too, the diseases for which denervations are done are of unknown etiology (*vide* Raynaud and hypertension) so that it is not the cause of the disease which is attacked but merely a symptom.

The surgery of hypertension is now in a phase of diminished popularity. It is pertinent to review the outcome of a series of operations carried out in Johannesburg during the last 6 years. The matter has been so completely dealt with objectively by Smithwick[6], Palmer and others[4] that it is not proposed to recapitulate. It is apparent, though, that the subjective side of the matter deserves more attention than it has received. Who, after all, should be able to judge the results of operation as well as the patient? The object of this communication is primarily to obtain his judgment.

MATERIAL

This paper is concerned with 140 private cases of essential hypertension operated on in the same institution in the 6 years 1945-1950 inclusive.

* The References will be published at the end of the concluding part of this paper.

SELECTION OF CASES FOR OPERATION

Of 334 cases referred for consultation with a view to surgery, 140 were considered suitable.

Investigation. All cases were hospitalized for a period of 4 days or more. The routine of investigation was essentially that as laid down by Smithwick. This included examination of the fundus oculi, cardiac, blood pressure and renal studies, the Hines Brown cold test and the amytal sedation test. From the data thus obtained the treatment indicated could be gleaned.

In the collection of blood pressure data it is obligatory that personnel be trained adequately and that the conditions under which pressures are registered remain constant. Thus private cases only are reported here as they can be examined by these criteria. In hospital where the training of nurses results in frequent changes of staff, blood pressure data are inaccurate and records become of little value.

In the selection of cases for surgery it is necessary, in the words of Max Peet, to determine the proper clinical profile of the patient. Thus:

(a) *The Pulse Pressure under Resting Conditions.* This enables the type of the case to be known.

Smithwick's criteria are:

A pulse pressure less than half the diastolic = Type I.
A pulse pressure less than half the diastolic + 19 = Type II.
A pulse pressure more than half the diastolic + 19 = Type III.

The width of the pulse pressure gives a valuable clue to the state of a cross section of the vascular bed. The more fibrosed or fixed this becomes, the smaller the hope that surgery can influence it. In this series of 140 operated cases the type distribution was as follows:

Type I : 40 cases.
Type II : 56 cases.
Type III : 44 cases.

(b) *The Pulse Rate.* After operation most cases show a postural hypotension. They feel faint on standing or may 'black out'. This is due to a pooling of blood in the denervated vessels and a relative cerebral anoxia. The patient wears an abdominal belt and leg bandages to prevent this condition. It is usually short-lived and ceases to be troublesome in a month or two, when supports may be discarded. It may, however persist and then becomes a

grave disability, cases being recorded where the patient was never again able to assume the erect position. Hypertensives who have a persistent tachycardia are potential candidates for this post-operative hypotension.

The knowledge of the pulse rate at rest therefore supplies some of the information required to determine the extent of the operation to be done and this in turn indicates the surgical route to be chosen. The patient remains in bed for 48 hours after admission for investigation and the pulse rate is recorded 6-hourly. It is also recorded during the performance of the cold test. If it remains persistently elevated with bed rest, or becomes markedly accelerated (100 per minute or more) during the standing part of the cold test, then the denervation is not carried below the 12th thoracic ganglion and is performed by the trans-thoracic route, which permits removal of the thoracic chain up to and including the 2nd ganglion, thus removing the cardiac accelerator nerves and so preventing the development of post-operative tachycardia.

This procedure gives some assurance against the development of postural hypotension and is a positive safeguard against the development of postural tachycardia, a condition disturbing to the sufferer who is conscious of and distressed by the persistent palpitation of the heart.

Postural hypotension and postural tachycardia are not necessarily interdependent, as the one may exist without the other. In fact, an argument against the performance of 'total sympathectomy' (ganglionectomy thoracic 1—lumbar 3) is that it is occasionally followed by incapacitating postural hypotension.

(c) *The Age of the Patient.* Peet advises that the clinical assessment of the case, i.e. the state of the patient's organs, must be the criterion for treatment and not the age in years. Severe essential hypertension with advanced vascular changes has been encountered at the age of 12. Contrariwise, this operation series includes a patient aged 60 at the time of operation where blood vessels were less fibrosed than those of the boy of 12. The former was the better choice for surgery as the follow-up shows.

(d) *Sexual Function.* All male patients were warned of the possibility of sterility following operation. They were given the assurance that potency would probably be little affected. In the overwhelming majority of cases patients stated that they had had their families and were not concerned about the possibilities mentioned. In a few cases younger men did express some concern but without exception decided to proceed with operation.

From letters subsequently received from the family doctor it would appear that some people forget the prognosis given or have failed to understand what has been said to them. For this reason as well as because of legal implications it is wise that the patient undergoing any type of lumbar ganglionectomy should sign a statement accepting the risk of sexual impairment. A more detailed consideration of the causes leading to such disturbances of physiology will be given later in this paper.

(e) *The Family History.* Essential hypertension is a Mendelian dominant. The family history is a matter of significance in determining operation and in assessing the prognosis. Instances arise where the evidence is fairly balanced for and against surgery. A family history of essential hypertension would swing the scale in favour of operation. Case No. 250 in this series is that of a lady sufferer from high blood pressure who is one of a family of 9. All suffer from essential hypertension and several have already died from it. She was unsuitable for surgery because of cardiac pathology.

(f) *Symptomatology.* This is an important factor in arriving at a decision regarding operation. Headache is the preponderating symptom in the great majority of cases. It is frequently so severe that operation is accepted because of the excellent prospect of relief it offers. In some instances the patient will say it is not headache but an intolerably unpleasant sensation in the head which is the cause of complaint. Ready fatiguability comes next. Dizziness is sometimes important. Irritability, failing memory and inability to concentrate are all conditions which perturb the patient.

Transient palsies not associated with unconsciousness sometimes occur. They are usually of grave prognostic significance. Angina, and symptoms of a right or left heart strain, occur commonly. It is unusual to find eye symptoms even though there are grade 3 or 4 retinal changes. Sometimes there is blurring of vision and one patient stated that the street lamps looked red following haemorrhage. It hardly ever happens that there are urinary symptoms.

It has become increasingly common in the writer's practice to advise surgery to relieve severe symptoms in cases which present no increased risk but which do not promise well from the viewpoint of reducing the blood pressure.

(g) *Renal Function.* This factor is still the one which often presents the greatest difficulty in forming assessments of hypertensives. The tests of the greatest value are the phenol-sulphone-phthalein (P.S.P.), the blood urea and the specific gravity of the urine. If in repeated P.S.P. tests the excretion in the first 15 minutes is below 15% and below 50% in two hours, operation is now refused. The percentage excretion in the first 15 minutes should be the highest reading, the second 15 minutes a lower one, and so on. Should one of the readings be higher than preceding ones in the same test, this reversal is looked on with seriousness as it implies a severe disturbance of renal function.

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It is disastrous to break these rules. If this is done it means that the patient will probably not survive surgery and the operation is brought into disrepute. Only once in this series of cases has operation been refused because of the condition of the heart (aneurysm of the left ventricle), but surgery has frequently been withheld because of bad renal function.

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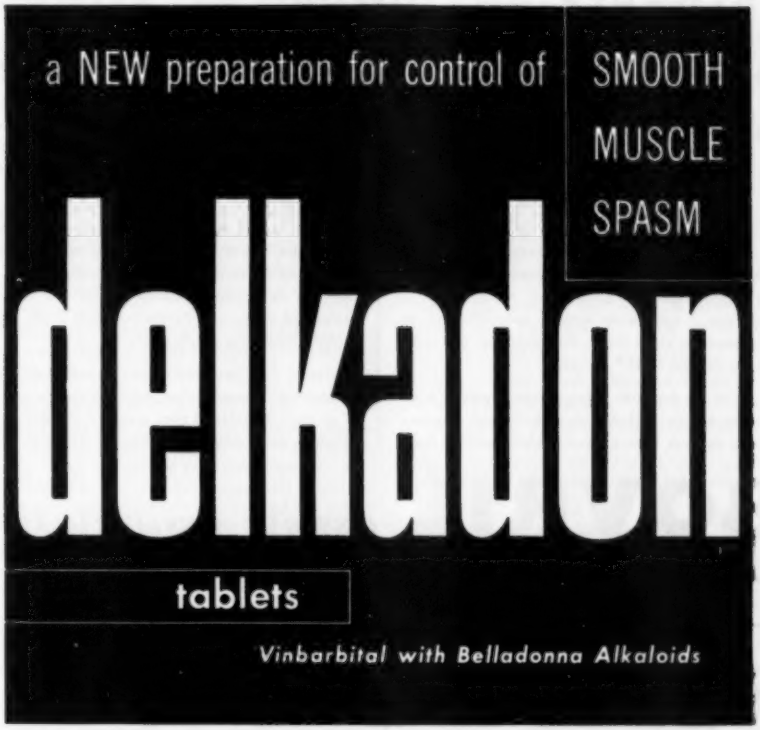

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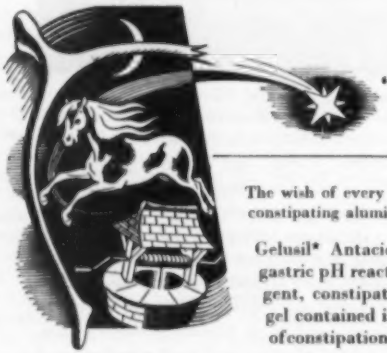

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evidence about excretory power. Occasionally unsuspected renal pathology is disclosed.

SHOULD OPERATION BE ADVISED?

It is usually possible, from a consideration of the detailed investigations described, to come to a decision. If the examination discloses no damage to important organs then the check-up is repeated annually.

All patients selected for surgery have been under medical treatment for long periods. Grade 3 and 4 eye changes are indications for operation if the risk is otherwise suitable. Paul White[7] has stated that cases with cardiac damage which are fair risks are particularly suited for operation because of the gratifying results. If the heightened blood pressure has produced organic damage and the patient has severe symptoms and protracted medical treatment has been without benefit, then operation may be offered to the patient, provided the check-up shows that the risk is not prohibitive and provided a physician of experience concurs in the decision.

If mental changes exist, operation is withheld and no cerebral episode must have occurred within 3 months of undertaking surgery.

THE PROGNOSIS EXPRESSED TO THE PATIENT

The patient is told that two major operations are necessary and that the mortality is not above 3%. It entails a stay of 4-5 weeks in an institution and there may be pain after operation which is variable in degree and duration, but that this pain *always gets better*. He will be off ordinary duty for 3 months after leaving the institution and during this period leg bandages and an abdominal support are worn. He should eschew smoking but may take alcohol in moderation. He should eat and drink rather less than he wants, not put on weight, and plan his routine of life so that he avoids hurry and worry in so far as he is able so to do. Sterility may possibly follow operation but potency is unlikely to be impaired.

THE EFFECTS OF OPERATION

These are twofold:

(a) *On the Blood Pressure.* Only a minority of patients sustain considerable maintained fall of blood pressure after operation. Three years following surgery about 40% show such a fall. Five years after surgery this figure has fallen to 20%. In some cases the blood pressure may rise after surgery.

(b) *On the Symptoms.* There is every likelihood that headache will disappear, and that haemorrhage and papilloedema of the retina will clear up. There is good prospect of improvement in the heart and kidneys. The patient will feel better in health generally. He will receive some measure of protection from vascular accidents because his blood pressure will be at its lowest when he is up and about and subjected to the strains of the day, whereas it will be at its highest during the quiet of the night. Experience has shown that all these benefits may and in the vast majority of cases do follow operation.

THE OPERATIONS

(a) *Lumbo-dorsal Ganglionectomy and Splanchnicectomy.* This follows the teaching of Smithwick. The routine procedure is a posterior incision with the patient prone. The neurectomy extends from the 8th or 9th thoracic ganglion down to and including the first lumbar ganglion. In the earlier cases the upper two or three lumbar ganglia were removed. This practice has been discontinued except in cases which, pre-operatively, show marked postural hypertension. This limitation is practised to avoid the serious complication of prolonged post-operative postural hypotension. This has not been seen in this series.

In the earlier cases in young subjects removal of ganglia thoracic 5 to lumbar 2 or 3 was done. So radical a procedure is being practised less and less as there are grave doubts about its necessity. In all cases the splanchnic nerves are removed as high as possible.

(b) *Transthoracic Ganglionectomy and Splanchnicectomy.* In cases of pre-operative tachycardia, or where angina or coronary changes exist, the route through a rib bed is used. This enables the cardiac accelerator fibres to be removed for tachycardia and the neurectomy includes ganglia thoracic 2–12 together with all the splanchnic nerves. For cardiac pain with coronary changes complicating hypertension all the thoracic plus the inferior cervical ganglia are removed together with the splanchnic nerves.

THE EARLY AND LATE POST-OPERATIVE COMPLICATIONS

During the period 1945-1950 a group of 140 private patients was operated on. The oldest was 60 and the youngest 26 years.

EARLY POST-OPERATIVE COMPLICATIONS

(a) *Operative Mortality*:

There were 4 post-operative deaths—a case mortality of 2.86%.

Hypertension Case No. 115. A male aged 38 died from a stroke 12 days after the second stage operation, when he was preparing to leave hospital.

Hypertension Case No. 249. An Indian lady aged 43 died from cerebral thrombosis on the day following the second stage.

Hypertension Case No. 100. A male aged 48 died of left ventricular failure the second day after the second stage.

Hypertension Case No. 11. A female aged 43 died from fatty degeneration of the heart when moved from the table to the trolley on the completion of the second stage operation.

(b) *Remarks on Anaesthesia.* The earlier anaesthetics were administered by Dr. S. Geffen, the later ones (comprising the great majority) by Dr. Samuel Hoffmann. It is a high encomium to the skill of these gentlemen that there was no anaesthetic complications in the entire series.

LATER POST-OPERATIVE COMPLICATIONS

(a) *Retro- or Intra-Pleural Effusions.* A number of such collections occurred early on in the series. Latterly they have been rare. In no case has infection occurred. All were cured by one or at most two aspirations. Routine chest plates are taken 8 days after each operation.

(b) *Post-Operative Thrombosis.* This event could reasonably be anticipated following prolonged operations associated with profound falls in blood pressure. Actually, post-operative thrombosis of any kind is extremely rare. It has been seen in the calf veins on one occasion only. Two cases of cerebral thrombosis have occurred. They followed immediately on operation and were associated with aphasia. In both cases recovery was complete. There is also the post-operative death from cerebral thrombosis mentioned above.

(c) There have been two cases of wound sepsis. Both were troublesome. It was necesary in each to remove a rib sequestrum and in one a plastic procedure was required to obliterate a small cavity with rigid walls.

(d) *Pain.* Pain complicating the surgery of hyper-

tension has received a degree of literary prominence out of all proportion to the facts of the matter. That it may follow on operation is incontestable and in the occasional case it may become a serious matter to patient and surgeon alike. Earlier in this series there were cases which failed to respond to treatment for a period extending into months. All cleared up and no case of drug addiction is known of.

There is nothing mysterious about this pain. It is of traumatic origin and due to the inclusion of the posterior division of a thoracic nerve in a ligature, the unwise purposeful division of intercostal nerves or traction. The latter is the important factor. If the exposed 11th and 12th intercostal nerves are not protected from injury, a traumatic neuritis will ensue. An inexperienced assistant may retract these nerves till they are taut as bowstrings. A rib spreader of the Finochietto type is the most powerful instrument in surgery and ribs frequently fracture when it is used.

Post-operative pain, intense and prolonged, following hypertensive operations, has ceased to occur as greater familiarity with the operation and better appreciation of the causative factors have developed.

(e) In several cases a flow of lymph was seen during dissection. With one exception this occurred on the left side below the diaphragm. It was ignored with no consequent ill result. In one case in the lower right thorax, the thoracic duct was torn across where it occupied an anomalous situation anterior to the head of the 10th rib. The ends were exposed and ligatured. Convalescence was uneventful.

COMMENT

The Smithwick operations for hypertension are extensive and traumatising procedures carried out at considerable depth from the surface. It is a noteworthy feature of this type of surgery that the case mortality is under 3% and that complications are minimal.

The lessons learned from this series of cases are that:

(a) A trained team is obligatory.

(b) With increasing experience operation time has been lessened; trauma has been minimized to the great benefit of the patient. Complications are rare and post-operative pain is ceasing to be a major factor.

(c) These cases should be investigated and treated by personnel both surgical and nursing thoroughly trained to the work. The treatment for hypertension will be disappointing if carried out under casual conditions and by those not specially trained for the work.

FOLLOW-UP

In the 6-year period 1945-1950 operations for hypertension were completed on 140 private cases. A questionnaire was sent to 130 of these; 11 cases were reported deceased. Fifty-three replies were received. Southern Africa is a vast area and it is often impossible for people to report for routine check-up. This makes the proper follow-up of cases a matter of extreme difficulty.

Of the 53 cases 32 were female and 21 male. The oldest patient was 60, the youngest 26 years. The average age was 42.45 years.

The longest period elapsed since operation was 5½ years. The shortest was 1¼ years. The average period was 3¼ years.

Renal biopsies for histological study are available in 49 cases. According to the classification of Moritz and Oldt [3] they were assessed as follows:

Group 0 – 9 cases.
Group 1 – 15 cases.
Group 2 – 11 cases.
Group 3 – 7 cases.
Group 4 – 7 cases.

As the group of cases under discussion is small and as it was found impossible in many instances for patients to come long distances for annual re-check, little purpose would be served and no statistical significance achieved by a detailed review of incomplete clinical records.

The group results according to Smithwick's criteria are as follows:

Group I	(Fall of 30 or more points in the resting diastolic pressure)	31%
Group II	(Fall of 20–30 or more points in the resting diastolic pressure)	16%
Group III	(Fall of 10–20 or more points in the resting diastolic pressure)	16%
Group IV	(Fall of 0–10 or more points in the resting diastolic pressure)	31%
Group V	Diastolic pressure raised	6%

Groups I, II and III are considered, in terms of the blood pressure, to be worthwhile results and sum to 63%. The impression gained regarding the several effects of operation was that surgery had been well worthwhile and real benefit had accrued to the big majority of cases. It was considered that the best way to check this impression would be to obtain the decision of patients themselves.

OPINION OF PATIENTS REGARDING THE EFFECTS OF OPERATION FOR HIGH BLOOD PRESSURE

Question 1: *Has your operation been*
(a) *very successful,*
(b) *successful,*
(c) *unsuccessful?*

Answers. (a) Very successful 26 (49%)
(b) Successful: 23 (43%)
(c) Unsuccessful 3 (6%)
Comment. Results satisfactory to patient 92%

Question 2: *How do you feel now compared with your condition before operation?*
Answers. Much better ... ... 35 cases = 66%
Better ... ... 15 cases = 28%
No better ... ... 1 case = 2%
Indefinite ... ... 2 cases = 4%
Comment. 94% felt improved after operation.

Question 3: *Are you fit for your usual work?*
Answers. Yes ... ... 44 cases = 83%
No ... ... 9 cases = 17%

Question 4: *Have you any headache?*
Answers. No ... ... 36 cases = 68%
Yes ... ... 6 cases = 11%
Occasional ... ... 11 cases = 21%

Question 5: *Have you any symptoms due to blood pressure?*
Answers. No ... ... 31 cases = 58%
Yes ... ... 19 cases = 36%
Undecided ... ... 3 cases = 6%
Comment. The symptoms mentioned were headache, palpitations, or shortness of breath.

Question 6: *Has the operation been worth the suffering and expense entailed?*

Answers. Yes ... ... 46 cases = 87%
No ... ... 2 cases = 4%
Undecided ... ... 5 cases = 9%

Comment. The great majority of cases considered the ordeal worthwhile.

Summing up the answers to the questionnaire it is apparent that a very high percentage of persons who had accepted surgery was happy with the outcome. In a great number of the cases the replies were couched in terms of enthusiasm and deep appreciation of the beneficial effects of operation.

NUMERICAL GRADING AS A CRITERION FOR OPERATION

Hinton and Lord [2] devised a means of numerical assessment of hypertensives to simplify and guide the selection of cases for operation. Smithwick [6] has also put the grading of such cases on a more secure and standardized basis.

Briefly, the scoring system consists of giving one or more black marks for each defect of the case and adding these up to determine the numerical grade, e.g. abnormal electrocardiogram or enlarged heart would each count 1, P.S.P. of 10% in 15 minutes = 3, nitrogen retention = 4. If a patient had all these defects his score would be 9. Readers are referred to the articles quoted for details.

An enormous amount of thought and painstaking labour has been devoted to the formulation of these rules and the writer wishes to offer sincere tribute to the workers responsible. Medicine is not an exact science and can never be reduced to mathematics, neither is that the intention of the authors mentioned. The value of the work is that a yardstick is now available for measuring the patient for surgery.

In Smithwick's system cases with 4 black marks or less fall into the first three of his groups. Those with more than 4 marks come into groups 4 or 5. The value of the numerical grading is at once apparent from Table I, copied from the article of Smithwick quoted above.

TABLE I: MORTALITY AMONG SURGICALLY-TREATED HYPERTENSIVE PATIENTS FOLLOWED FOR 5-10 YEARS ACCORDING TO NUMERICAL GRADING OF CARDIOVASCULAR STATUS

Numerical Grade	*No. of Cases*	*Deaths*	*Mortality*
Less than 4	255	31	12%
4 or more	126	78	62%
Total	381	109	29%

(To be concluded)

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For the interval treatment of gout and the treatment of gouty arthritis, it is recommended that 0.5 gm. (1 tablet) be administered daily for one week followed by 0.25 gm. (one half-tablet) four times daily. Renal impairment is common in patients with gout and therefore a daily dosage of 1 gm. will be adequate for the majority of patients. However, it may be desirable to increase the dosage to 2 gm. daily for optimal uricosuric effect.

If acute attacks of gout are precipitated during treatment, 'Benemid' therapy *should be continued* without changing the dosage, and full therapeutic doses of colchicine should be instituted to control the acute attack. Alkaline urine should be maintained by daily administration of 5–7.5 gm. sodium bicarbonate or 7.5 gm. potassium citrate. Due attention should be given to the acid-base balance of the patient. 'Benemid' has no analgesic action but salicylates *are contraindicated* as they interfere with the action of 'Benemid'.

Literature on request from Sharp & Dohme, P.O. Box 5933, Johannesburg.

ABSTRACTS

Vitamin B_{12} by Mouth in Pernicious and Nutritional Macrocytic Anaemia and Sprue. T. D. Spies, R. E. Stone, *et al.* (1949): Lancet, **257**, 454.

Ten cases were treated with Vitamin B_{12}. It was concluded that the minimum, maximum and optimum dosage of B_{12} varies from patient to patient and from time to time in the same patient. Parenteral administration is more efficacious than oral. No case of sensitivity to Vitamin B_{12} on injection has so far been reported. In some cases of macrocytic anaemia, patients do not respond to B_{12}, liver extract or folic acid.

Thymine, Folic Acid and Vitamin B_{12} in Nutritional Macrocytic Anaemia, Tropical Sprue and Pernicious Anaemia. T. D. Spies, R. E. Stone, G. G. Lopez, F. Milanes, R. L. Toca and T. Aramburu (1948): Lancet, **2**, 519.

A comparative study of thymine, folic acid and Vitamin B_{12} in single cases of pernicious anaemia nutritional macrocytic anaemia and sprue. Each compound proved haemopoietically effective in each syndrome. To produce similar blood responses, the amount of thymine required was several thousand times that of folic acid, and the weight of folic acid needed was several thousand times that of Vitamin B_{12}.

South African Medical Journal
Suid-Afrikaanse Tydskrif vir Geneeskunde

EDITORIAL

VACCINATION AGAINST TUBERCULOSIS: IS IT EFFECTIVE?

A recent report in the lay press [1] that the Government proposes to launch a campaign to immunize thousands of Natives against tuberculosis and has authorized the South African Institute for Medical Research to undertake large-scale production of BCG vaccine for this purpose, makes it necessary to examine this programme dispassionately and scientifically.

There is a considerable body of support, especially from Scandinavian countries, which endorses the use of BCG vaccine as an effective, efficient and practical means of inducing immunity against tuberculous infection. Indeed, in certain of the Scandinavian countries even newly born infants are inoculated with BCG vaccine; and there is little doubt that, in Scandinavia, tuberculosis has become a rare disease.

The history of BCG vaccine is not, however, without an important lesson. When Calmette introduced the vaccine in the early 1920's, he actually opposed a controlled experimental study of the position in France; and Myers [2] makes the positive and bald statement that no such controlled investigation 'has been conducted with sufficient care to rule out all other factors or long enough to justify dependable conclusions regarding the efficaciousness of BCG. In fact, several proponents of its use now oppose such a study on the ground that time should not be lost while waiting for facts. This is an example of enthusiasm having outrun not only due caution but judgment as well'.

It is not generally appreciated to what extent the claims of the enthusiastic proponents of the use of BCG vaccine are to-day the subject of serious criticism. Myers, who speaks with authority and experience in this field, has stressed the fact that the natural history of tuberculous infection reveals that there is no dependable immunity in this infection. Moreover, Rich, after an intensive study of the problem, found no parallelism between hypersensitivity and acquired resistance in tuberculosis. Dubos has drawn an important analogy with streptococcal infection. He reminds us that tests to devise streptococcal allergy do not measure resistance to streptococcal infection. By analogy the tuberculin test does not necessarily measure immunity to tuberculosis. Indeed, allergy, far from being a criterion of immunity, is to-day regarded

1. *Cape Times*, 16 January 1952.
2. Myers, J. A. (1951): J. Amer. Med. Assoc., **146**, 1492.

VAN DIE REDAKSIE

INENTING TEEN TUBERKULOSE: IS DIT DOELTREFFEND?

'n Onlangse aankondiging in die leke pers [1] dat die Regering van voorneme is om 'n veldtog van stapel te stuur om duisende Naturelle onvatbaar te maak teen tuberkulose en die Suid-Afrikaanse Instituut vir Mediese Navorsing gemagtig het om BCG entstof, vir hierdie doel, op groot skaal te vervaardig, maak dit nodig om hierdie program onpartydig en wetenskaplik in oënskou te neem.

Daar is 'n aansienlike mate van ondersteuning veral van Skandinawiese lande, wat die gebruik van BCG-entstof onderskryf as 'n doeltreffende, kragdadige en praktiese wyse om onvatbaarheid teen tuberkulose besmetting te bewerkstellig. Inderdaad, in sekere Skandinawiese lande word selfs pasgebore babetjies met BCG entstof ingeënt; en daar bestaan geen twyfel dat tuberkulose, in Skandinawië 'n seldsame siekte geword het nie.

Die geskiedenis van BCG-entstof is egter nie sonder 'n belangrike les nie. Toe Calmette die entstof in die vroeë twintigerjare ingevoer het, het hy in werklikheid 'n beheerde eksperimentele studie van die posisie in Frankryk geopponeer; en Myers [2] maak die positiewe en naakte verklaring dat geen sodanige beheerde ondersoek ‚met genoegsame sorg onderneem is om alle ander faktore uit te skakel nie, of lank genoeg om betroubare gevolgtrekkings aangaande die doeltreffendheid van BCG te regverdig nie. In werklikheid opponeer verskeie van die voorstanders van die gebruik daarvan nou so 'n studie op grond daarvan dat tyd nie verlore moet gaan terwyl daar op feite gewag word nie. Dit is 'n voorbeeld van geesdrif wat nie net behoorlike voorsorg nie maar ook oordeelkundigheid vooruit geloop het.'

Dit word nie algemeen begryp tot watter mate die aansprake van die entoesiastiese voorstander van die gebruik van BCG-entstof vandag die onderwerp van ernstige kritiek is nie. Myers wat met gesag en ondervinding op hierdie gebied praat, het nadruk gelê op die feit dat die natuurlike geskiedenis van tuberkulose-besmetting aan die lig bring dat daar geen betroubare immuniteit in hierdie besmetting is nie. Bowendien het Rich, na 'n intensiewe studie van die probleem, geen ooreenkoms tussen oorgevoeligheid en verkrygde weerstand in tuberkulose gevind nie. Dubos het 'n belangrike ooreenkoms met streptokokke-infeksie bewys. Hy herinner ons daaraan dat toetse om streptokokke allergie te bewerkstellig nie weerstand teen streptokokke infeksie meet nie. By analogie meet die tuberkulien toets nie noodwendig immuniteit teen tuberkulose nie. Inderdaad word allergie, verre daarvandaan om 'n maatstof van

1. *Cape Times*, 16 Januarie 1952.
2. Myers, J. A. (1951): J. Amer. Med. Assoc., **146**, 1492.

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as a necessary prerequisite for the development of the destructive forms of tuberculosis. The tuberculin reaction may, in fact, be regarded as undesirable and actually to be avoided if tuberculosis control is to succeed.

Many generations of physicians have been deceived by the phenomena of allergy. Allergic responses, as we well know, temporarily fix bacilli at what Myers calls 'points of lodgment'. Hence when allergy has been induced artificially the dissemination of virulent organisms is retarded temporarily; but this fixing power of the allergy is not permanent and ultimately, weeks or months or even years later, dissemination of the organisms can occur.

It is also disturbing to find that the virulence of BCG strains is not constant and that in certain circumstances, e.g. when animals are maintained on deficient diets, the BCG used for immunization can cause pulmonary disease and even death. The harmlessness of BCG vaccine has by no means been established.

These observations are alarming. Coupled with the fact that recent work in France has demonstrated the capacity of BCG vaccine to produce a widely disseminated killing disease in apparently normal hamsters, we are faced with the suggestion from experimental work that *undernourished populations are probably the most unsuitable subjects for a programme of prophylaxis.*

The apparently beneficial results which have been claimed, especially in the Scandinavian countries, as due to BCG vaccine, may well have been due to the remarkable and progressive development in social services in that part of the world. In Denmark, e.g. there has been an almost continuous decrease in mortality (excluding World War I) from 1906 onwards; but the mortality rate graph shows no dramatic decrease consequent upon the use of BCG.

It has also been claimed that the BCG immunization programme in Japan will prevent the occurrence of most of the clinical forms of tuberculosis. The fact that the annual death rate has dropped from 280 to 181.1 per 100,000 has been attributed largely to the use of BCG.

In Buenos Aires a decrease (attributed to BCG) of some 72% occurred in the tuberculosis death rate in children under 15 years of age between 1924-1944. These facts, as Myers has stated, would be convincing evidence were it not that similar decreases have occurred in other parts of the world without the use of BCG, e.g. during the very same period covered by the Buenos Aires study, there was a fall in the tuberculosis death rate in New York city of about 95%, entirely without the use of the vaccine.

The doubt and hesitation about the value of BCG vaccine comes not only from the United States. The recent *Report of the Medical Research Council*[3] states that evidence of the efficacy of BCG vaccine is still uncertain even after some 30 years. It may have some value when given 'to those closely exposed to the disease,

3. *Report of the Medical Research Council for the Years 1948–1950* (1951). London: His Majesty's Stationery Office.

immuniteit te wees, vandag beskou as 'n nodige voorvereiste vir die ontwikkeling van die destruktiewe vorms van tuberkulose. Die tuberkulien-reaksie kan feitlik as ongewens beskou word en moet werklik vermy word as tuberkulose-beheer suksesvol moet wees.

Baie geslagte van geneeshere was deur die verskynsels van allergie bedrieg. Ons weet almal goed dat allergiese reaksies basille tydelik vestig op wat Myers ‚punte van deposito' noem. Daarom wanneer allergie kunsmatig teweeggebring is, word die verspreiding van kwaadaardige organismes tydelik vertraag; maar hierdie fikserende mag van die allergie is nie permanent nie en uiteindelik, weke, of maande of selfs jare later, mag verspreiding van die organismes voorkom.

Dit is ook ontstellend om te sien dat die kwaadaardigheid van BCG rasse nie konstant is nie, en dat onder sekere omstandighede, bv. wanneer diere op ontoereikende voedings gehou word, kan die BCG wat vir immunisasie gebruik word, longsiekte en selfs die dood veroorsaak. Die skadeloosheid van BCG-entstof is nog geensins bevestig nie.

Hierdie opmerkings is onrusbarend. Gepaard met die feit dat onlangse werk in Frankryk die vermoë van BCG-entstof gedemonstreer het om 'n wyd-verspreide onweerstaanbare siekte by oënskynlike normale hamsters te veroorsaak, staan ons volgens eksperimentele werk voor die moontlikheid dat *ondervoede bevolkings waarskynlik mees ongeskik vir 'n program van voorbehoeding is.*

Die oënskynlike heilsame resultate wat op aanspraak gemaak word, veral in die Skandinawiese lande, as te danke aan BCG-entstof, kan heel moontlik te danke wees aan die merkwaardige en progressiewe ontwikkeling van sosiale dienste in daardie deel van die wêreld.

In Denemarke was daar bv. byna 'n aanhoudende vermindering van die sterftesyfer (uitgeslote Wêreld-Oorlog I) vanaf 1906; maar die sterftesyfer-grafiek toon geen dramatiese daling as gevolg van die gebruik van BCG nie.

Daar is ook aanspraak op gemaak dat die BCG-immunisasieprogram in Japan die voorkoms van die meeste kliniese vorms van tuberkulose sal verhoed. Die feit dat die jaarlikse sterftesyfer van 280 tot 181.1 per 100,000 gedaal het, was grotendeels aan die gebruik van BCG toegeskrywe.

In Buenos Aires het 'n vermindering (toegeskrywe aan BCG) van ongeveer 72% voorgekom in die tuberkulose sterftesyfer by kinders onder 15 jaar tussen die jare 1924-1944. Soos Myers gesê het, sal hierdie feite oortuigende bewys lewer as dit nie was dat soortgelyke verminderings, sonder die gebruik van BCG, in ander dele van die wêreld voorgekom het nie, bv. gedurende een en dieselfde tydperk gedek deur die Buenos Aires-studie, was daar uitsluitlik sonder die gebruik van die entstof, 'n daling in die tuberkulose sterftesyfer in New York van ongeveer 95%.

Die twyfel en aarseling omtrent die waarde van BCG-entstof kom nie net van die Verenigde State af nie. Die onlangse *Rapport van die Mediese Navorsingsraad*[3] verklaar dat getuienis oor die doeltreffendheid van BCG-entstof selfs na ongeveer 30 jaar nog onseker is. Dit mag 'n sekere mate van waarde hê wanneer dit toegedien word ‚aan diegene wat baie blootgestel is aan die siekte, en selfs by hulle sal die beskerming as onvoltooid en tydelik voor-

3. *Rapport van die Mediese Navorsingsraad vir die Jare 1948–1950* (1951): Londen: His Majesty's Stationery Office.

and even in them the protection would appear to be incomplete and not permanent. . . . Unfortunately the design of (the) huge mass-efforts (of the inoculation of millions of tuberculin-negative children) has been such as to make it virtually impossible to judge the degree of benefit accruing in the years to come' (*op. cit.*, pp. 11-12).

It is, therefore, reasonable to ask whether the fundamental methods operating so effectively before the use of BCG are not actually responsible for the continued diminution of tuberculosis after the introduction of the vaccine. Because of this probability, and also because statistical analysis indicates that BCG vaccine is likely to affect only some 3% of cases of tuberculous infection (and not 60-80% as has been claimed), if it can influence the disease at all, the position obviously needs very careful revision.

Although to-day there is a considerable doubt about the value of BCG vaccine in producing any effective immunity against the disease, a *prima facie* case has certainly been made out for a carefully controlled study. Such a pilot experiment would be more than justified in South Africa if it were undertaken with the most scrupulous attention to the scientific requirements which must govern such investigations. A study of this kind is under way in the United States where it is anticipated that the experiment will have to be continued for 25 years and probably longer before the position about BCG can be clarified. Such studies are an absolute necessity, otherwise much harm may be done to existing programmes devoted to tackling the known social causes of the disease. This very real risk is one of which the needle-happy school of inoculators is either reckless or unaware.

In these columns we recommended preliminary fieldwork as far back as 1948.[4] However attractive theory and speculation in these matters may be, we must defer to the changes in outlook which newer knowledge about BCG vaccine requires. There is need for speed in settling this problem because progress in this field is measured in decades rather than in years. The issue obviously requires urgent consideration by the whole team of medical practitioners involved in the problems of eradicating and preventing tuberculous infection.

4. This *Journal*, 13 November 1948, p. 661.

kom. . . . Ongelukkig was die ontwerp van (die) reuse massa-poging (van inenting van miljoene tuberkulien-negatiewe kinders) sulks dat dit feitlik onmoontlik gemaak is om die mate van voordeel wat sal voortspruit in die jare wat kom, te bepaal' (*op. cit.*, bladsye 11-12).

Dit is derhalwe redelik om te vra of die fundamentele metodes wat so doeltreffend gewerk het voor die gebruik van BCG nie in werklikheid verantwoordelik is vir die voortdurende vermindering van tuberkulose na die invoering van die entstof nie. Weens hierdie waarskynlikheid, en ook omdat statistiese analiese toon dat BCG moontlik slegs ongeveer 3% van gevalle van tuberkuloseinfeksie sal affekteer (en nie 60-80% waarop aanspraak gemaak is nie) indien dit die siekte op die minste kan beïnvloed, benodig die posisie klaarblyklik sorgvuldige hersiening.

Hoewel daar vandag aansienlike twyfel bestaan oor die waarde van BCG om enige doeltreffende immuniteit teen die siekte te verkry, is daar seer sekerlik 'n *prima facie* saak vir sorgvuldig beheerde studie. So 'n eksperiment om leiding te gee, sal in Suid-Afrika meer as geregverdig wees as dit onderneem word met die mees stiptelike nakoming van die wetenskaplike vereistes wat sodanige ondersoeke moet beheer. 'n Studie van hierdie aard is in die Verenigde State onderweg, waar dit in die vooruitsig gestel word dat die proefneming vir 25 jaar en moontlik langer volgehou sal moet word, voordat die posisie omtrent BCG opgeklaar sal kan word. Sodanige studies is 'n absolute noodsaaklikheid, anders kan bestaande programme gewy aan die aanpakking van die bekende sosiale oorsake van die siekte baie skade berokken word. Hierdie werklike groot risiko is een waarmee die naald-verliefde ienter òf onbekend is òf waaroor hy onverskillig is.

Sover terug as 1948 [4] word veldwerk deur ons in hierdie kolomme aanbeveel. Hoe aanloklik teorie en spekulasie in hierdie sake ookal mag wees, moet ons die verandering in die uitkyk eerbiedig wat die jonger kennis omtrent BCG-entstof vereis. Daar is behoefte aan spoed met die beslegting van hierdie probleem want vooruitgang op hierdie gebied word in dekades liewer as jare gemeet. Die geskilpunt vereis klaarblyklik dringende oorweging deur die hele span mediese praktisyns wat met die probleem van uitwissing en voorkoming van tuberkulose-besmetting gemoeid is.

4. Hierdie *Tydskrif*, 13 November 1948, p. 661.

RECURRENT ECLAMPSIA

REPORT OF A CASE

E. C. CRICHTON, M.D., F.R.C.O.G.
Cape Town

Mrs. G. G., a Malay fifth para, aged 36 years, presented herself at the Gynaecology Out-Patient's Department, Groote Schuur Hospital, Cape Town, on 12 April 1949, with a request to be sterilized and have her present pregnancy terminated because of her previous bad obstetric history.

Previous Medical History. The patient had been perfectly fit between pregnancies, and her gynaecological history was normal. The last menstrual period had occurred on 16 February 1949. There was no history of nephritis, essential hypertension, scarlet fever or other relevant illness.

Each of the preceding 4 pregnancies had been complicated by eclampsia at or near term with stillborn

children. The first pregnancy in 1938 proceeded without ante-natal supervision, and the delivery occurred at home so that no notes were available. The patient stated that she had headaches and swelling of the feet, hands and face in the last 2 weeks of pregnancy. Several fits occurred after disturbances of vision had supervened, and her doctor, who was called in, gave her some injections. A spontaneous stillbirth ensued within 2 hours, and she remained unconscious for several hours; but her people would not sanction her admission to hospital. She apparently made a complete recovery and felt well until the end of her next pregnancy in 1939.

The second pregnancy was also unsupervised, and in the last 3 weeks of pregnancy she again developed swelling of the feet, hands and face, and experienced headaches. Her doctor told her that she was suffering from high blood pressure and advised admission to hospital which she refused. Three fits occurred during labour at term, and the child was stillborn. The patient made a complete recovery and suffered no further subjective symptoms until her third pregnancy in 1941.

In 1941 she was 38 weeks pregnant when she was admitted as an emergency to the Peninsula Maternity Hospital. She gave a history of headaches, epigastric pain and vomiting of 4 days' duration, and had observed swelling of the feet for a month. Two fits had occurred at home, and the patient was semi-comatose when examined in hospital. Her feet, hands and face were oedematous, and the blood pressure reading was 210/100 mm. Hg. The urine was heavily loaded with albumin. Labour commenced spontaneously soon after admission, and 2 intra-partum and one post-partum fit occurred in spite of the patient having received repeated intramuscular injections of morphine ¼ gr., and 15 c.c. of a 40% solution of magnesium sulphate. The toxaemic signs and symptoms subsided rapidly, and when she was discharged from hospital 16 days after delivery the oedema had disappeared, the urine contained a trace of albumin, and the blood pressure reading was 135/85 mm. Hg.

The patient developed eclampsia during the 38th week of her fourth pregnancy in 1943, and was admitted to the Somerset Hospital as an emergency admission. One fit occurred at the time of admission, and another occurred at home, but further fits were prevented successfully with the aid of morphine and magnesium sulphate injections. The foetal heart ceased during labour which had been induced by artificial rupture of the membranes 36 hours before. The blood pressure reading was 140/90 mm. Hg. the urinalysis was normal and the oedema had disappeared by the time the patient was discharged from hospital 14 days after delivery.

The Present Pregnancy: History. The patient, who was 8 weeks pregnant, felt well and her only reason for attending hospital was to request sterilization and termination of this pregnancy.

On Examination. The general condition of the patient was good. She was not oedematous or anaemic, and the pulse rate and temperature were normal. No abnormality was detected during examination of the cardio-vascular, respiratory, nervous or gastro-intestinal systems. The findings on vaginal examination were consistent with those expected in a normal pregnancy of 8 weeks' duration.

Special Investigations. The blood pressure reading was 120/75 mm. Hg., the optic fundi were normal and albumin, blood, casts, or other abnormal constituents were not detected on examination of the urine. The blood urea was 21 mg. per 100 c.c., and the van Slyke urea clearance test, intravenous pyelogram and liver function tests were all normal. The serum protein level was 6.5 gm. %, and the albumin-globulin ratio was 3.7 : 2.8. The Wassermann reaction was negative, and patient's blood was Rh positive (Fisher's 'D').

Progress and Treatment. The patient's request for termination of pregnancy and sterilization was refused in view of the normal findings on examination and special investigation, but strict ante-natal supervision was advised, and she agreed to attend the Groote Schuur Hospital Ante-Natal Clinic every fortnight.

Table I indicates her progress:

Date	*Blood Pressure (mm. Hg.)*	*Urine*	*Oedema*	*Weight (in lb.)*
12 April 1949	120/75	Normal	Absent	116
10 May 1949	125/80	Normal	Absent	118
7 June 1949	138/80	Normal	Slight	121
12 July 1949	135/90	Normal	Slight	123
9 August 1949	140/105	Normal	Slight	128
23 August 1949 (Admitted)	160/110	Normal	Slight	130

The patient was 27 weeks pregnant when she was admitted to hospital on 23 August 1949, and the toxaemic signs had increased since her previous attendance at the Ante-Natal Clinic, although she had been resting almost continuously at home, and receiving a salt-free diet and luminal, 1 gr. 3 times a day. She was kept at rest in bed in hospital, and received Sodium Amytal 1 gr. 3 times a day and a salt-free high-protein diet rich in vitamins. Her condition deteriorated in spite of treatment, and she complained of headache which increased in severity. The blood pressure continued to rise, albumin appeared in the urine, and the hands and face became oedematous.

On 23 August 1949 the physical signs were as follows:

The height of the fundus uteri corresponded to a period of amenorrhoea of 28 weeks. The blood pressure reading was 170/120 mm. Hg. and the optic fundi were normal. The urine contained a moderate quantity of albumin, and the excretion of the preceding 24 hours amounted to 30 oz. of urine. The feet, hands and face were oedematous.

In view of these findings a caesarean section and sterilization was performed the same afternoon; but the infant which was delivered only survived for 5 hours and weighed 2 lb. 13 oz. Nineteen hours after delivery the patient's blood pressure had risen to 170/140 mm. Hg; the quantity of albumin in the urine had increased and red blood corpuscles, hyaline, granular and epithelial casts were detected for the first time. Morphine and magnesium sulphate were injected intramuscularly, but in spite of these precautions a single post-partum eclamptic fit occurred.

DISCUSSION

Schmechel (1929) estimated that eclampsia recurs in 18% of pregnancies, but other authorities give a much more conservative recurrence rate. Hinselmann (1924) in a series of 10,000 eclamptic patients, found that eclampsia

recurred in 1.92% of pregnancies, and Eastman (1950) maintains that the recurrence rate is less than 1%. These and many further publications have recorded instances in which eclampsia has recurred in a single subsequent pregnancy, but reports of eclampsia recurring on more than one occasion are uncommon. Laun (1928), who described a patient whose pregnancies had been complicated by eclampsia on 3 occasions; but the patient described by Clow (1928), who developed eclampsia in 4 successive pregnancies, is the only case reported in the literature which resembles the unique case described here. Apart from the interest arising out of the fact that eclampsia supervened in each of this patient's 5 pregnancies, it is remarkable that she was left with no detectable residual pathology.

The cause of recurrent eclampsia is not known, but 3 main theories exist about its aetiology. Kellogg (1924) and Gibberd (1928) suggested that the additional strain imposed on the kidneys in pregnancy reveals a renal lesion, which is insufficient to cause symptoms or signs in the non-pregnant state. It is impossible to prove or disprove with absolute certainty whether this theory is applicable to the case described, because even the searching clinical and laboratory investigations which were carried out might still have been normal in the presence of a surprising degree of renal pathology. Nevertheless, if indeed occult nephritis had been the predisposing factor to recurrent eclampsia in this patient, it is surprising that 5 attacks of eclampsia did not render the nephritis manifest in the pregnant or non-pregnant state.

Browne (1948) holds the view that 60% of cases with recurrent toxaemia have a raised blood pressure between pregnancies, and that in the remaining 40% 'the blood pressure though normal is borderline . . .' and 'in these cases there is a familial hypertensive tendency, and pregnancy does nothing more than unmask a latent hypertension'. It is difficult to ascribe the recurrent eclamptic attacks in the case described to an underlying essential hypertension, for it would be reasonable to expect that 5 pregnancies complicated by eclampsia would have resulted in a permanent elevation of blood pressure, whereas in actual fact the blood pressure reading was 120/75 mm. Hg and the optic fundi normal. Furthermore, 5 of the patient's blood relations over the age of 30 years, who were examined, were not hypertensive, and these findings did not suggest a familial hypertensive tendency.

Young (1929) believes that recurrent toxaemia is due to some factor in the placenta: if the area of placenta damaged or separated is large enough and the placenta is retained for a sufficiently long time, toxaemia will occur. In the case of the patient described, the placenta of the fifth pregnancy was examined and showed no macroscopic or microscopic pathology.

Finally, there is the possibility that the recurrence of eclampsia in this patient was purely fortuitous; but this suggestion is rendered statistically ludicrous when one assumes that the normal incidence of eclampsia is 1 in 500 pregnancies, for the chance of eclampsia recurring in 5 pregnancies would be 1 in $3{,}125 \times 10^8$.

One must accept that there is an underlying cause for the recurrence of eclampsia on 5 consecutive occasions—but what it is remains an enigma.

My grateful thanks are due to Dr. S. Benjamin for his help in carrying out many investigations in this case.

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FAYE PYE, B.A. (CANTAB.), M.A. (PSYCH.) (LOND.), L.R.C.P., M.R.C.S.
Durban

This paper gives an account of two patients who have been investigated and treated by analytical psychotherapy. The case histories are presented in order to demonstrate:

(a) The multiple factors that léd to psychosomatic breakdown;

(b) The place and importance of the psyche in determining health and disease;

(c) A clinical approach to the patient.

CASE 1: MRS. A. B.

Onset of Illness. This patient, aged 32, first became aware that she was ill when she had an attack of infective hepatitis. She was treated for this condition by her family doctor, and after the hepatitis had apparently subsided she still complained of general malaise, persisting and marked loss of weight, diarrhoea, and attacks of intense pain in the right hypochondrium. Laboratory and X-ray reports were negative repeatedly. A specialist physician was consulted, who used an authoritative, reasurring psychological technique, and for a short period the patient's malaise improved. But after some weeks her morale collapsed, the loss of weight continued and the pain returned. At this stage she was sent for intensive psychotherapy. Weekly talks uncovered a tense, emotional situation which had been present for many years.

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The problematic situation had begun in childhood in the family environment. The patient's mother had been an unhappy frustrated woman, whose marriage had failed to provide her with the companionship, appreciation and social life that she needed and that she felt to be her due. Her alienated husband left her at home alone in the country for long periods, with only her family of young daughters to interest her. Otosclerosis, progressive with each pregnancy, made more difficult her rare human contacts. At the same time her deafness increased the bitterness and resentment that she felt against her husband and the children, since she came to regard them as usurpers of the life that should have been hers, and as the cause of her isolation.

She compensated by acting out her emotional conflicts within the family circle. One daughter she chose as the object of all the affection that she herself missed, and as the recipient of all the social and educational advantages. Our patient (Mrs. A. B.) felt herself to be the chief butt of the negative resentful emotions, to be relegated to the nursery, denied affection, and given little or no opportunities to develop her interests and talents. She grew up as a lonely, withdrawn girl, harbouring deep inferiority feelings. Finally she entered a profession, and escaped from the family background by coming to South Africa where she met and married her husband.

Factors in the Marriage Situation. The patient's husband was 12 years older than herself, and was an only child with a pathological attachment to his mother. Sexual relations were rare and difficult for him, but they had one child. Mr. A. B. was extremely introverted, devoted to his work, and found human contact outside the home to be an unnecessary and irksome distraction. Mrs. A. B. made the best of her circumstances, found satisfaction in her home, her child, her garden and her security, and developed some social life of her own.

Factors in the Present, Precipitating Acute Illness. The precarious integration which Mrs. A. B. had established broke down when she experienced a succession of disturbing environmental influences, all of which challenged her insecure unconscious foundations.

First, her husband's work forced them to leave their home and to move to a town where suitable accommodation was hard to find, friends difficult to make, and she had no garden. Secondly, her child became ill, and threw her into an acute anxiety that she might lose the one child she would ever be able to have. Then her mother chose to follow her out to South Africa. And finally, her mother-in-law decided to come and live near the son, Mr. A. B. Every one of these events was an aggravation of the tension in Mrs. A. B.'s conscious and unconscious mind.

It was at this point that she succumbed to infective hepatitis, and subsequently suffered from psychosomatic symptoms long after all evidence of organic disease had passed. The acute hepatitis occurred 10 months before the patient came for analysis.

Solution in Analysis. The clarification of the life history and its relevance to her present situation helped the patient to understand the nature of her problem. She was able to volunteer that throughout her life emotional stress had produced diarrhoea and colic. Analysis of the unconscious through discussion and dream analysis brought to light the faulty emotional patterns based on fear and resentment which constituted her habitual response to people and to her environment. Anxiety, emotional insecurity and a sense of foredoomed frustration, not unlike her mother's, became clear to view. The attacks of pain could be directly related to incidents which stimulated an acute-on-chronic attack of resentment and anger.

The patient gained in insight and learned to appreciate the nature of her own reactions. Abreaction relieved the tension, and helped her to gain a degree of detachment. By making her situation conscious in all its past and present ramifications, she became able to meet it with a mature adult attitude.

Constructive results followed upon these developments in the patient:

1. The attacks of pain subsided, she regained her normal weight, and the scope of her interests, social life and activities widened. She was well and enjoyed life.

2. Her excessive anxiety for her child diminished, who correspondingly flourished and was less subject to minor ailments.

3. Her relationship with her husband improved. She learnt to make independent decisions, and at the same time found means to interest him in less narrow channels of life.

4. She clarified her adult relationship with her mother, and also persuaded her to have an ear aid—a step which the mother had violently resisted hitherto when it had been suggested by the rest of the family.

5. She found a house with a garden. This may appear to the reader to be a stroke of 'chance' or luck, but in the experience of the writer it is not uncommon that the external environment becomes favourable when situations are tackled in a way that is not neurotic.

DISCUSSION OF CASE 1

This patient presented with an organic illness, but emotional problems lay at the root of her disease.

The emotional insecurity was the product of past experiences, and represented a failure in development. Because of this failure the patient was inwardly an immature, vulnerable individual, who had neither the stability to carry, nor the initiative to change the heavy load of the present environment. The body-mind organism could not tolerate the situation, and expressed its disease by both somatic and psychic symptoms.

A subclinical depression and malaise preceded the infective hepatitis by some months. The hepatitis was a sign of the greater vulnerability to infection which so commonly accompanies emotional maladjustment. Removal of the infection, though a necessary measure, was only a partial treatment, and the patient remained a sick personality.

Recognition of her lowered morale and the use of superficial psychotherapy were a step in the right direction, but in this case proved inadequate. The fundamental emotional problems remained untouched. The main operative forces lay deep in the psyche, and only the direct treatment of these could recover the patient's morale. The restored individual was then able to deal effectively with the environmental problem, the nature of which she now understood.

CASE 2: MISS C. D.

Onset of Illness. This young woman of 23 developed a suicidal depression and lost weight rapidly. She not only made an abortive attempt at suicide, but she also implored her father to kill her. These were the first overt signs of illness, so far as her parents were aware, but severe constipation, amenorrhoea and a slight growth of facial hair preceded by several months the complete breakdown.

Analytical talks were begun at intervals of three times a week. At the same time the advice of a gynaecologist was sought, and hormone therapy instituted.

Factors in the Past and in the Family Relationships. The patient remembered that she first felt different from other people at the age of 4. She remembered that she had been in a room with her mother with all the windows shut, and she had seen other children go by in groups from school. She had been overwhelmed with a sense of isolation, loneliness and inferiority.

This recollection, whether it was true memory or fantasy, embodies much of the patient's problem, which she drew from the family environment and the personalities of her parents.

Her mother was a lonely, unhappy woman, who had been brought up in a large family of boys without any preparation or guidance for an independent life. She was taught that duty to her parents was everything. At the same time there had been strict surveillance of all social activities and a complete silence with regard to sexual matters. When she married, she achieved success neither in the intimacy of relationship with her husband nor in establishing an independent life. She withdrew into her domestic duties, and leaned heavily and possessively on the companionship of her little daughter for comfort.

As Miss C. D. grew up she became more deeply entangled in the parents' life. The father was academic, critical and apt to speak harshly. He had no understanding of his wife's difficulties. But he was proud of his daughter's intelligence and liked her companionship. So she became a wedge driven between her parents. A large part of her libido was used in supplying their individual emotional needs, and in keeping the peace between them. These activities drew her out of her proper group into a sphere where the emotional complexity was beyond her understanding and was in any case unhealthy.

In this way she went through her school life, always with a creditable academic performance and a good reputation, but with a deep unspoken sense of being cut off from her own kind. Always in the back of her mind was the idea, 'I can't go on like this, something has got to happen. Everyone trusts me, but I am not what they think I am. . . .'

When she was 12 a traumatic experience increased her burden of isolation, and added an additional burden of guilt. Her brother, who was 6 years older than herself, became physically interested in her, and there was contact of a kind that stimulated her sexual feelings. She spoke of this to no one, but became even more deeply convinced of her own inferiority and difference from other people.

Factors in the Present, Precipitating Acute Illness. The first of these was an encounter with a young man who was attracted to her, and asked her to a dance. It was her first experience of the kind, she was awkward and inadequate, and the attraction between them roused the guilty feelings that had their origin in the incest fantasy. This failure, slight and commonplace though it was, had a profound effect upon her. She was certain now that her life had been ruined, that in a sense she had died before she had even begun to live.

Some time after this some money was stolen in the office in which she worked. There was no question that she was implicated in the theft, but she thought that everyone suspected her. She misinterpreted remarks and gestures. She began to feel ineffectual even in her work, to be overscrupulous and anxious about duties. Reassurance from her superiors made no difference.

At this point she began to lose weight, became constipated, and at the same time developed a voracious appetite. Her periods stopped, and one day a girl friend casually pointed out that hair was growing on her chin. Awareness of these physiological changes took their toll of her mental stability. She saw herself as a monster that should never have been born. This was the moment of complete collapse. She tried to shoot herself.

Solution in Analysis. This patient undertook her treatment without either faith or enthusiasm. She adopted the attitude that since she herself had the courage neither to die nor to live, someone else must take the responsibility for her. She was resistant and unco-operative. If she were allowed to talk without guidance she would only reiterate tonelessly her unworthiness and her self-disgust. She complained of feelings of automatism and unreality, and a lack of emotion or interest. Sometimes she experienced abnormal emotional reactions—a desire to laugh when she should cry, and *vice versa*.

The details of the history were extracted slowly in the course of the talks. Dream analysis, written accounts of her subjective state, paintings that expressed feelings she could not verbalise, were all techniques used to unearth and make objective the deeply buried negative emotions.

When once the negative unconscious emotions, together with the incidents that had given rise to them, had been made objective, three important therapeutic factors operated. The first was the release of the tension in abreaction; the second was the acceptance of the emotions by the therapist in such a way that the patient no longer felt herself to be isolated with her fear and guilt; the third was the achievement of a detached understanding of her circumstances and the way that they had affected her. For this purpose, it was necessary that she should also be aware of those aspects of her parents' psychology that had invaded her own life.

Re-education followed. This became possible as the freed libido crept back into objective interests. She resumed part-time work, undertook lessons in pottery, and became able to extend the sphere of her human contacts. Weekly analytical talks were maintained throughout this period, and occasional talks with one or other parent facilitated the formation of a new pattern of life.

At this stage, about seven months after the beginning of treatment, natural menstruation was re-established. The patient began to put on weight, and was no longer so preoccupied with her bodily functions.

After she had been receiving treatment for a year, she was living an active, free and independent life, and was

no longer in need of therapy. She was in every respect healthier and happier than before her breakdown.

DISCUSSION OF CASE 2

Miss C. D. is another example of emotional disorder manifesting itself in psychosomatic symptoms. Her disorientation was in proportion to the severe degree of emotional immaturity. This patient could not be said to have entered adult life at all, but was still wholly caught in the parental-environmental deadlock. She had reached a period of psychosomatic development when there was an imperative need to grow beyond her neurotic background, but she was so crippled by fear and isolation that she could not face the task.

COMPARATIVE DISCUSSION OF CASE 1 AND CASE 2

Both these patients received analytical treatment as a last resort, but in each case it proved to be a specific need. The technique of analysis was that of the Jungian School.

There was a qualitative difference in the illness of the two patients. Mrs. A. B. suffered from a general lowering of morale and physical vitality. Miss C. D. experienced a spontaneous dysfunction and disorientation of the biological organs, and at the same time a conscious death-wish. Mrs. A. B. was in retreat from a difficult life situation. Miss C. D. was in retreat from life itself. Mrs. A. B.'s neurosis was not superficially apparent. Miss C. D. was totally consumed by hers, and her symptoms were those of a borderline psychotic of schizoid type.

In considering the recovery of these patients, and the contribution made by analytical psychotherapy, the writer is aware that queries can be raised. Acute hepatitis may be followed by a slow recovery and prolonged convalescence: schizophrenia is subject to spontaneous remissions. But in both cases, the outlook of the patients was so radically changed, and the stages of their improvement were so directly related to important developments in psychological understanding, that the idea of spontaneous recovery unrelated to treatment has been discarded. In neither case did the patient merely recover the compromise adaptation that had existed before the illness. Both of them acquired a new approach to life.

GENERAL DISCUSSION

The Therapeutic Goal. Two cases have been described, which have been treated by analytical psychotherapy. Multiple factors contributing to their respective ill health have been exposed. An attempt has been made to show that disease in each case was a product of the total personality, and that when it was treated as such the diseased condition was capable of radical change. The goal of this change was the re-integration of the personality in a form consistent with health.

The Therapeutic Approach. In order to effect this change, it was necessary that the therapist should approach the patient with a particular mode of observing the facts, and with a particular therapeutic orientation. The mode of observation corresponds to the Hippocratic method, in that it is clinical and naïve. The orientation derives from the work of C. G. Jung, who gives full recognition to the subjective elements in the individual personality.

The mode of observation, together with the therapeutic orientation, results in an acceptance of the patient's subjective experience as a field of real phenomena which can be observed and treated. This subjective experience includes both conscious and unconscious materials, and is concerned both with emotions and values.

Subjective and objective phenomena are regarded as equally important.

The Psychosomatic Paradox. The above remarks are not intended to advocate a vaguely total approach to the patient. In order to realize this therapeutic point of view, it is necessary to hold constantly in mind a paradox:

On the one hand, a human being is a living entity in whom the whole is more than merely the sum of the parts. This is so, because of the presence of the irreducible and imponderable factor 'life', without which the organism as an entity ceases to exist. It is also so, because of those subjective values which we associate with being 'human', without which our civilization and culture would cease to exist.

On the other hand, traditional body-mind dualism and scientific materialism abstract from the living whole useful categories and causal relations. These make it possible to grasp and record the clinical phenomena, and to take effective action about this or that particular phenomenon.

Every practitioner must therefore be consciously aware of two fundamental complementary issues:

1. The wholeness and indivisibility of the living-organism-in-environment, with the uniqueness and unique value of each individual, in whom the psyche is the central integrating agent.

2. The complexity of the parts of the whole, any one or more of which may require intensive investigation. Psyche and soma, as different aspects of nature and as objects of therapy, must be allowed to possess different attributes, to obey different laws and to be accessible to different techniques.

The appropriate application of this bi-polar approach is the art of psychosomatic medicine.

The Subjective Psyche Neglected. In the organic sphere, the complexity of the parts of the total organism is already recognized. Practice has been split into numerous intensive specialities. There is even a danger that these specialities may become so intensive and so self-contained that they are no longer related sufficiently to the living whole.

But the psyche in its own right has not received the same consideration. Too often it is regarded as a field not worthy of explicit recognition except for the grosser manifestations of disorder. The psychic factor in diseases of the personality, which may present as any form of ill health, is either ignored or is treated superficially with reassurance, common sense advice, domination and sedation. Such an approach is useful, and may certainly be effective with comparatively well-integrated patients who are in need of temporary support. But in many psychosomatic cases such treatment produces only a short-lived euphoria and a lull in the manifestation of symptoms. The error in this approach is that it neglects the subjective psyche, and fails to observe the unique circumstances of the individual personality.

Change Required in Medical Orientation. It is not the writer's wish to depreciate the devoted attention which many practitioners give to the personal life and background

of their patients. But it is felt that a more explicit recognition should be given in all branches of practice to the importance of the patient's total life situation. This recognition should begin with the teaching in the medical schools, and should be an indispensable part of medical training. It should not be necessary to graft a 'psychological attitude' on to an exclusively physiological and anatomical education. This is the uncomfortable and difficult task which seems to confront many doctors, unless they are wholly occupied with materialistic techniques.

Role of Analytical Psychotherapist. A truly psychosomatic orientation would enable practitioners to deal more adequately with those of their patients requiring superficial psychotherapy. At the same time they would be better equipped to recognize those cases which required intensive analytical treatment. The patient would then be saved a great deal of suffering, and the doctor as much frustration.

In order that such a goal may be reached, there is a need for more analytically trained practitioners to fill the role of analytical psychotherapist. In order to be analytically trained, the practitioner must himself have undergone an intensive analysis. By this means he gains experience of the unconscious psyche, and becomes as far as possible aware of his own unconscious complexes. This is necessary in order to minimize the danger that he will contaminate or be contaminated by the patients' unconscious.

Change Required in Psychiatric Orientation. There is also a need for a more holistic approach in the sphere of psychiatry itself. Many of the methods of psychiatry consist in an exclusively anatomical or physiological approach to the psyche, as if the latter were merely the passive recipient of secondary effects from an organic level. The personality, and especially the unconscious psyche, are too often depreciated.

When subjective factors are primary, as they probably are in more cases than are yet realized, lasting results can only be achieved by techniques specially designed to reach the subjective psyche.

Inadequacy of Materialism. An exclusively physiological or materialistic approach is inadequate for three reasons:

1. It treats symptoms, not causes.
2. It rejects subjective phenomena, in spite of their actual, factual existence and operativeness.
3. It imposes on the patient a false conception of his own nature, and the nature of his illness, and so stands between him and his human right to an integrated personality.

SUMMARY

Two psychosomatic cases have been described, and their case histories as elicited by analytical psychotherapy have been demonstrated. They illustrate the need to approach the sick individual in his totality as a psychosomatic-environmental-being, living in Time.

In a general discussion, the factors in medical practice and philosophy which prevent this total approach to the patient are mentioned. These include the materialistic bias of the medical schools in favour of anatomy and physiology, which results in a materialistic compartmental treatment of the human organism in clinical practice.

It is suggested that a new and more holistic conception of the human being as the object of medical practice is required, in order to effect a re-orientation of all branches of medical practice. In order to achieve this new conception, it is not enough to graft a 'psychological attitude' on to a training in scientific materialism. But it is necessary to appreciate the basic importance of the subjective psychic factors in the healthy integration of the total organism.

TUBERCULOUS INFECTION

ITS INCIDENCE IN A GROUP OF URBAN BANTU BABIES IN LAMONTVILLE, DURBAN

B. GAMPEL, M.B., CH.B.

Institute of Family and Community Health, Durban

In South Africa the problem of tuberculosis in the Bantu is of great importance. The Annual Report of the Secretary for Health for the year ended 30 June 1947 states that 153.13 per 100,000 of the Bantu population were notified as cases of pulmonary tuberculosis during that year. The death per 100,000 notified in the same year was 47.36 (Gale [9]). The Annual Report for the Pholela Health Centre for the year ended 30 June 1950 indicates that in the rural Native area of Pholela the known case prevalence for all types of tuberculosis, including primary tuberculosis, was 15.7 per 1,000 of the population. Dormer [7] estimates the number of Bantu deaths in South Africa from tuberculosis per year at 16,000 (urban and rural) out of a population of approximately 8,000,000. In Durban the annual notification rate and death rate for all forms of tuberculosis in the Bantu is 8.82 and 3.60 per 1,000 of the population respectively. This excludes imported cases (Gunn [11]). These figures would therefore lead one to expect a high incidence of tuberculosis infection amongst infants of this country.

MATERIAL

This study of tuberculosis in infancy is part of a planned investigation into the health and development of infants which is being undertaken by a team of workers at the Institute of Family and Community Health, Durban (Kark [16]). The author is concerned with that part of the investigation which deals with the natural history of infections in a group of Bantu babies of Lamontville born during the period 1 January to 31 December 1949.

Lamontville is a Durban municipal housing scheme for urban Native families consisting of 682 homes and a population of 4,300. A proportion of these people are 'visitors' who live in the area for only short periods and many of them have come to Lamontville to obtain medical attention (Phillips [23]). By arrangement with the local

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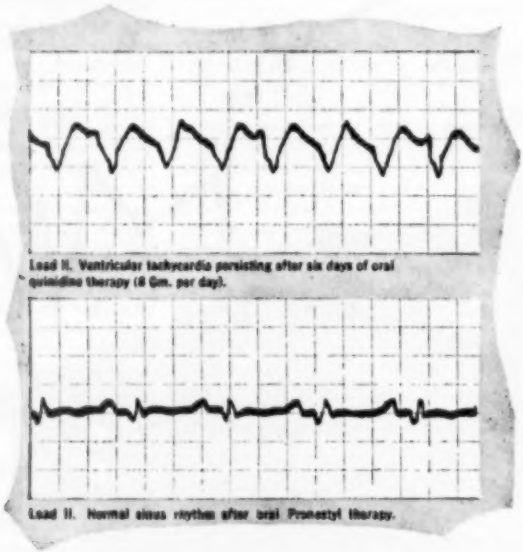

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authority the personal health services to the community are provided by the Institute of Family and Community Health through one of its associated Health Centres. The nature of this service has been described by Gale [10] and Kark.[17]

This report is based on the results of tuberculin patch tests on 143 babies who were tested at least once in their first year of life. During the year 1949 there were 209 live births in the abovementioned area. Sixty-six of these babies were excluded from the study for the following reasons:—

Died before test could be applied, 3;
Moved out of the area permanently before test could be applied, 21;
Non-co-operation by parents, 12;
Temporary visitors in the area, 15;
Babies of permanent residents who were noted when this study was already well advanced and were therefore missed, 15.

At the end of the first year of life, 96 of the 143 babies in the study were still under investigation.

METHODS

It was planned to visit each baby at its home once weekly, to obtain a history of any illness during the week and at the same time to note overt signs of infection that might be present at the time of the visit. These periodic home visits were carried out by experienced nursing staff and a 'Medical Aid' (B.Sc. Hygiene). They carried out a total of 4,554 visits to the homes of the 143 infants, an average of 31.7 visits per baby during the year. The field staff of nurse and Medical Aid reported their findings at weekly meetings with the author for the first three months of the study. Thereafter meetings were conducted monthly.

More detailed clinical examinations of these babies were carried out by the author; these examinations totalled 463, an average of 3.3 per infant in the year. Included in this latter figure are examinations conducted in the homes of babies. Periodic radiological examinations have also been carried out on these infants. Although the mothers were aware of our intention to visit their babies weekly, and in fact most of the homes were visited with this frequency, it was not uncommon to find no one at home at the time of the visit. These visits are therefore not included in the analysis.

At the home visit tuberculin patch tests were applied and read. It was our intention to apply a test to each baby every 6 weeks, the Lederle tuberculin patch being employed. The patches have at all times been kept in a cool place and have been used long before their expiry date. Not all the patches used have been from the same batch. The site selected for application has been between the scapulae just lateral to the spinal column. Where a rash in this area has been found, the patch was applied over the sternum. If a rash was also present on this alternative site, the test was postponed. The site for application was thoroughly cleansed and defatted with acetone and the patch firmly applied without stretching the underlying skin. Constant education of the mothers had the desired effect of ensuring that no moisture came in contact with the patch and that it was not exposed to intense sunlight or wind. Mothers removed the patch 48

TABLE I A

Number of Tuberculin Patch Tests Applied and Results Recorded		
Frequency Distribution of No. of Tests	*No. of Babies*	*Total*
1	19	19
2	10	20
3	9	27
4	16	64
5	13	65
6	20	120
7	24	168
8	14	112
9	10	90
10	8	80
Total	143	765
Average Number of Tests per Baby : 5·4		

TABLE I B

Number of Babies Tested at Different Age Periods			
Age in Weeks	*No. of Babies Tested for First Time*	*% of Total*	*Total No. of Babies Tested*
–4	59	41·2	59
–8	53	37·1	72
–12	15	10·5	72
–16	5	3·5	53
–20	2	1·4	64
–24	2	1·4	55
–28	5	3·5	55
–32	2	1·4	55
–36			59
–40			46
–44			61
–48			40
–52			45

hours after application. Tests were read 48-72 hours after removal of the patch. Whenever there was any doubt about the interpretation of the tuberculin reaction, such results were not included in the analysis. A total of 134 tests was rejected for the following reasons:

The child was away when the patch was due to be read, 48;
The patch was removed too early, 13;
It was left on too long, 5;
It was read too late, 27;
There was a generalized 'plaster reaction', 6;
The investigators forgot to read the patch, 14;
There were 21 'doubtful' results.

There were 765 recorded results in the 143 infants, an average of 5.4 tests per baby in the year (Table IA). Nineteen babies were tested only once and 8 were tested on 10 occasions. One hundred and twenty-seven babies (88.9%) were tested for the first time in the first 12 weeks of life; the remaining 16 (11.2%) were first tested between 13-32 weeks (Table IB). In the first 4 weeks of life 59 infants were tested for the first time while 2 babies were tested for the first time between 28-32 weeks. Four babies were tested in the first week of life. The number of babies tested in each four-week period in the first year of life is also shown in Table IB. The numbers tested vary from 40 (28%) tested between 45-48 weeks and 72 (50%) tested both in the periods 5-8 and 9-12 weeks.

FINDINGS

Thirty-five of the 143 infants tested (24.5%) were found to be tuberculin positive in the first year of life. The age period in which these 35 positive results were found is shown in Table II. Seven of these cases (20%) occurred in the first 12 weeks of life and 17 (48.6%) in the first 24 weeks. The earliest age at which a positive reaction was found was in a baby aged 6 weeks.

TABLE II: AGE AT WHICH FIRST POSITIVE TUBERCULIN REACTION OCCURRED

Age in Weeks	*No. of Babies*	*% of Total Positive Reactors*
–4	0	—
–8	4	11·4
–12	3	8·6
–16	4	11·4
–20	3	8·6
–24	3	8·6
–28	0	—
–32	7	20·0
–36	2	5·7
–40	5	14·3
–44	4	11·4
–48	0	—
–52	0	—
Total	35	100%

The figure of 24.5% positive reactions in the first year of life is probably an understatement of the true position, because not all babies were tested at each age-period, i.e. at the ages of 0-3, 3-6, 6-9 and 9-12 months (Table III). It will be seen from this Table that the total of 143 babies can be divided into three categories depending on the age at which they were first tested; it will also be noted that the frequency of testing within each of these categories varies. Thus Group A (129 babies) were tested for the first time at 0-3 months. There were 122 negative reactions in this group and of these, 96 were tested for the second time at 3-6 months, 4 had their second test at 6-9 months and one at 9-12 months. Of the total of 101 who were tested twice, there were 90 negative reactors. Again of these 90 babies it will be seen that 74 were tested for the third time at 6-9 months and 6 at 9-12 months. A total of 80 were therefore tested for the third time, and of these there were 70 who were negative. Fifty-three of these 70 negative reactors were finally tested for the fourth time in the period 9-12 months.

Group B (10 babies) were tested for the first time at 3-6 months and they were all negative. Seven of these were tested for the second time at 6-9 months and one at 9-12 months. Six of these 8 babies were negative reactors and finally 5 were tested for the third time at 9-12 months. In Group C there were 4 babies, all of whom were tested for the first time at 6-9 months and found to be negative reactors. Three of these 4 babies were finally tested at 9-12 months.

At the end of the 9-12 month period the following are the results definitely known: 63 negative; 35 positive; and 45 who were negative at earlier age periods, but not tested in the 9-12 month period. If these 45 babies are assumed to have remained negative until the age of one year, then the figure of 24.5% positive reactions would be correct. However, this assumption is not justified. A figure which would more accurately reflect the incidence of infection at various age levels has therefore been calculated. This calculation is based on the application of the life-tables and survival rates (Bradford Hill [15]). By this method the probable percentage of babies remaining negative in each age period has been calculated and is shown in Table III. On the basis of these percentages, viz. 94.6, 85.7, 74.1 and 67.7 in the ages 0-3, 3-6, 6-9 and 9-12 months respectively, the probable percentage of positive reactors would therefore be 5.4, 14.3, 25.9 and 32.2. This means that at the end of the first year of life 67.7% of babies probably remain negative and 32.3% have become infected. It appears most likely that this final estimate of 32.3% is a truer reflection of the incidence of tuberculous infection in the first year of life.

DISCUSSION

The Use of the Tuberculin Patch Test. In this study reliance has been placed on the tuberculin patch test for the diagnosis of the first infection with tuberculosis in infancy. Allen [1] has stated that the tuberculin test is a 'fine screen' available for such diagnosis. Myers and Harrington [22] state that the tuberculin test detects the presence of the disease long before other methods of examination are of any avail, and that in the majority of cases it remains the sole diagnostic agent during life. The same authors also state that in 75% or more of the children

TABLE III: RESULTS OF TUBERCULIN PATCH TESTS

	Tested for First Time				Tested for Second Time				Tested for Third Time				Tested for Fourth Time				Number Tested	Number Positive	Percentage Positive	Probable Percentage of Babies Remaining Negative
	Group	Number Tested	Negative	Positive	Group	Number Tested	Negative	Positive	Group	Number Tested	Negative	Positive	Group	Number Tested	Negative	Positive				
0–3 months	A	129	122	7																
																	129	7	5·4	94·6
3–6 months					A	96	86	10												
	B	10	10	—																
																	106	10	9·4	85·7
6–9 months					A	4	4	—	A	74	64	10								
					B	7	5	2												
	C	4	4	—													89	12	13·5	74·1
9–12 months					A	1	—	1	A	6	6	0	A	53	49	4				
					B	1	1	—	B	5	5	0								
					C	3	2	1									69	6	8·7	67·7

who are positive tuberculin reactors, X-ray examination fails to reveal the lesion.

Because repeated tests were carried out in this series of babies, it was important to select a simple test. Injections required in the Mantoux test would most certainly have produced objections from the mothers, making the study impossible. Miller[21] supports this contention and suggests that where repeated tests are to be done, the modified jelly test might be the best method of meeting this difficulty.

The method of application of the patch, as well as the interpretation of the results, was carried out on the lines suggested by Vollmer and Goldberger.[30] The repeated application of the test to either negative or positive reactors has had no obvious deleterious effects on the infants. Schwartzman *et al.*[27, 28] contended that the patch test appears to be harmless to non-tubercular individuals. Repeated tuberculin testing, ranging from 11-60 tests in a group of 10 infants from 2-9 months old and given over a period of from 1-6 months, did not produce sensitization in their babies.

Numerous studies to evaluate the patch test have been done. Many workers (Hart,[13] Court,[4] Vollmer and Goldberger,[31] Faulkner and Cordi,[8] Reisman and Grozin,[26] Crimm *et al.*,[5] Neiman *et al.*[24] and Dormer *et al.*[6]) found a high correlation between the Mantoux and patch tests and in some cases the correlation was found to be 100%. Kereszturi[18] found a considerable variability among the findings of different authors in comparative Mantoux and patch test studies, as well as discrepancies between the two tests in his own work. Vollmer[29] found that 'pseudo-reactions' to the tuberculin patch test were rare. Baldwin[3] concludes that the patch test is useful in surveys provided that Mantoux tests are done in cases showing negative patch results. The fact that repeated tests were carried out in this study may well increase the number of positive reactions found by the patch test.

The Incidence of Tuberculosis Infection in Infancy. Many investigations to determine the incidence of tuberculosis in infancy, by the use of the tuberculin test, are recorded in the literature. These reports are based on a cross-section study and also show the following variations:

i. Differences in racial, geographic, environmental and social conditions.

ii. Differences in the sample of the group studied, e.g. hospital admissions, known tubercular contacts or random sample of the population.

iii. A wide range in the ages of the children on which the reports are based.

In South Africa, Altmann[2] found that 14% of Bantu children admitted to hospital had a positive tuberculin test. The ages of the children were between 3 weeks and 2 years. Woods[32] recorded 12% in South African Bantu children between 0-4 years old in a random sample. Haynes,[14] in Kenya, found an incidence of infection of 1.9% in a random sample of rural Bantu infants under one year old. Hart[12] recorded an incidence of 6.5% in white children 0-2 years old in England. These children were all hospital out-patient cases and were clinically non-tuberculous. Miller[21] in England found that a group of white children of 0-1 years in contact with pulmonary tuberculosis had an incidence of 20.5% (where the contact case had either a positive or negative sputum) and 0% of cases who were in contact with forms of tuberculosis other than pulmonary. Myers,[23] on a group of 196 American white infants under one year old, found a prevalence of 6.1% reactors and 4.6% 'questionable reactors' on first testing and a change of 1.5% non-reactor to reactor on subsequent testing. Mencia and co-workers[20] found 16% reactors in a randam sample of babies 0-1 years old in Havana. In a group of hospital children from homes where one of the parents had open tuberculosis, Kostić-Joksić[19] in Yugoslavia, found that 8.1% of these children in the age group 1-6 months had a positive tuberculin reaction, whilst 20.7% in the age group 7-12 months, were positive.

A longitudinal investigation, such as the present study, is likely to be a more sensitive mechanism for determining the incidence of infection, than the method of a cross-section study employed by the various workers mentioned. For this reason especially, the probable prevalence of

32.3% infection in the first year of life as found in our study is not strictly comparable to the percentage prevalence found by others.

As a result of the findings in this study, the Institute of Family and Community Health has introduced periodic repeat tuberculin testing in its programme of infant care.

SUMMARY

1. The results of the follow-through study of tuberculous infection in 143 urban Bantu infants during their first year of life is reported. The method of selection of these babies is set out.

2. The tuberculin patch test was used and it is on the results obtained by this method that the incidence of infection is based. Details are given of the methods employed in the study.

3. Of the 143 babies tested at least once during their first year of life, 35 (24.5%) were found to have been infected with tuberculosis. However, because of the follow-through nature of the investigation it has been possible to calculate the *probable* incidence of infection in the first year of life. This figure, 32.3%, is likely to be a more accurate reflection of the true state of affairs.

4. A longitudinal study, which allows for periodic testing of each individual at various age levels, is considered to be the method of choice in attempts to assess the incidence of tuberculous infection in children.

I wish to express my gratitude to Dr. S. L. Kark for his constant guidance and individual criticism, and to members of the staff of the Institute of Family and Community Health who assisted in the investigation. Thanks are due to the Secretary for Health for permission to publish this paper.

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IN MEMORIAM

Dr. D. M. Brink

We announce with regret the death of Dr. D. M. Brink on 19 December 1951, in his 52nd year.

Daniel Montagu Brink was the eldest son of P. A. Brink who was one of the founders of the firm of Brink Brothers, Montagu.

He started his education at Montagu and was at the University of Cape Town a few years before proceeding to Trinity College, Dublin, where he graduated B.A. in 1926. He took the M.B., B.Ch. and B.O.A. degrees in 1928. He held a house appointment at the Meath Hospital, Dublin, and then did assistantships in Cardiff and Griffithstown just outside Newport. He came out to South Africa in December 1929 and did general practice in Wepener in the Free State until 1932, when he was appointed Railway Medical Officer at Wynberg, C.P., where he practised until his death.

He took his work very seriously, had a wonderful sense of humour and fitted in very well with his chosen life's work—general practice. Dan was a born General Practitioner. He loved his work and gave freely of himself, and he did not spare himself in any way. In a very short time he won the affectionate regard of his patients to a remarkable degree. He soon developed a large family practice in addition to his railway work. That proved too much for him, and his health began to give in. Two years ago he was seriously ill, but after a while he recovered and resumed his practice. The demand for his services was so great that he could obtain but little respite, and he had no time for relaxation. No wonder the end came very unexpectedly.

He was a staunch friend and a loyal comrade and his patients were devoted to him. The sincere sympathy of a host of friends goes out to his loyal wife Evelyn, and his son Peter.

Cape Town. D. J. Roux.
30 January 1952.

Dr. Moise Halperine

The death took place in Johannesburg on Thursday, 13 December 1951, of Dr. Moise Halperine, the well-known gynaecologist and obstetrician.

Dr. Halperine was born in the Ukraine on 5 October 1901. He received his medical education in Paris, where he qualified M.D. and C.S.P.G. (Cours Superieur de Perfectionnement de Gynecological), and was appointed assistant gynaecologist to the Hospital Broca, University of Paris. Thereafter he proceeded to London where he obtained the Conjoint Diploma.

In London Dr. Halperine held the following appointments:

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NO. OF CHILDREN	DIAGNOSIS	NO. WITH GOOD RESPONSE	NO. WITH NO RESPONSE
14	Lobar pneumonia	14	0
31	Bronchopneumonia	31	0
8	Otitis media	6	2
1	Tonsillitis	1	0
1	Sinusitis	1	0
2	Infectious hepatitis	0	2
1	Exanthem subitum	0	1
1	Measles	0	1
1	Typhoid fever	0	1
1	Laryngo-tracheo-bronchitis	1	0
1	Gonorrheal vaginitis	0	1

*Patterfield, T. G., and Startweather, G. A.: J. Philadelphia Hosp. 2: 6 (Jan.) 1951.

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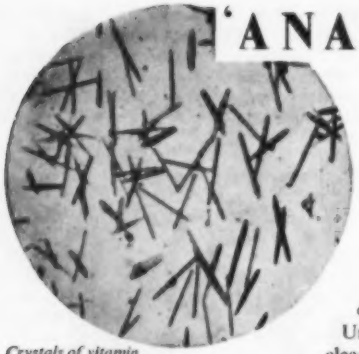

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Occasionally, cases of pernicious anæmia arise which cannot be treated satisfactorily, even with Anahæmin, because of hypersensitivity. For the temporary treatment of such cases Anacobin is available.

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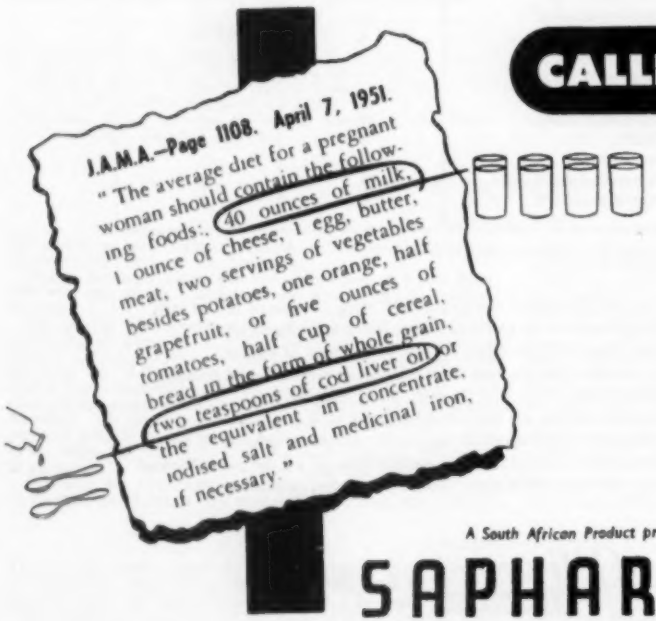

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Temporary Assistant Gynaecological Surgeon, Metropolitan Hospital London, Clinical Assistant, Samaritan Free Hospital for Women, London.

He came out to South Africa in 1931, and commenced his specialist practice in Johannesburg. He was honorary visiting gynaecologist to the Discoverer's Memorial Hospital, Roodepoort; Gynaecologist to the Transvaal Clothing Industry Medical Aid Society; Honorary Consulting Obstetrician and Gynaecologist to the Sanctuary Non-European Maternity Hospital.

During the war he did invaluable work for soldiers' dependants by organizing a medical service for them.

Among his contributions to medical literature was a monograph *Contribution a l'etude de l'extract folliculaire dans les trouble ovariens* (Paris).

He is survived by his wife, and daughter Vivienne, a student at the Witwatersrand University.

J. S. Zidel.

Johannesburg.
25 January 1952.

PASSING EVENTS

Dr. E. D. Cooper has been appointed Medical Officer of Health for the City of Cape Town in succession to Dr. F. O. Fehrsen who retired recently.

Dr. Cooper began his medical studies at the University of Cape Town in 1927 and then proceeded to Glasgow where he qualified in 1932. In 1937 he gained the Doctorate of Medicine at the University of Glasgow with honours and was also awarded the Bellahouston Gold Medal for the best thesis of the year. His original work on a subject pertaining to diseases of childhood won him the Harry Stewart Hutchinson prize in the same year.

Dr. E. D. Cooper

Dr. Cooper has had an extensive clinical as well as public health experience, and has several important publications to his credit. During World War II he served in the Armed Forces in the South African Medical Corps in East Africa, the Middle East, Italy and Great Britain.

He was appointed Deputy Medical Officer of Health, Cape Town, in November 1944 and has now been confirmed in the position of Medical Officer of Health, a post he has held from time to time in an acting capacity.

* * * *

Mr. H. Katz, Ch.M., left by air on 5 February for three months' post-graduate surgical studies in London.

* * * *

Dr. David Ordman, of the South African Institute for Medical Research, who has returned from a visit to Europe where he attended the First International Congress on Allergy in Zurich, has been elected a Corresponding Member of the Société Française d'Allergie.

POST-GRADUATE COURSES FOR MEDICAL MEN AND WOMEN

The Royal Institute of Public Health and Hygiene announces that the next bi-annual Course of Instruction for the Certificate in Public Health, and for the Diploma in Industrial Health (Part I), will commence on Friday, 21 March, and the following one on 3 October 1952.

This leads to Courses for the Diploma in Public Health, and for the Diploma in Industrial Health (Part II), respectively.

(All Courses may be taken either whole-time or part-time.)

Prospectuses, enrolment forms, and full details may be obtained from the Secretary of The Royal Institute of Public Health and Hygiene, 28 Portland Place, London, W.1, England.

FIRST-AID ATTENDANCE AND TREATMENT OF WOUNDS

Pamphlet No. 2 in the *First-Aid Series*, issued by the Office of the Workmen's Compensation Commissioner, has just been published.

The pamphlet deals with the treatment of wounds by first-aid attendants and has been prepared in consultation with the Association of Surgeons of South Africa.

Copies of this pamphlet, as well as other literature, are obtainable from the Workmen's Compensation Commissioner, P.O. Box 955, Pretoria.

EMPIRE MEDICAL ADVISORY BUREAU

South African medical practitioners who are thinking of visiting the United Kingdom should get into touch with Dr. H. A. Sandiford, Medical Director of the Bureau, at B.M.A. House, Tavistock Square, London, W.C.1, so that all the facilities of the Bureau will be placed at their disposal.

Medical practitioners will find the Bureau helpful in arranging accommodation as well as post-graduate courses of study.

REVIEWS OF BOOKS

CONTROL OF CONCEPTION: THE MINERVA CALENDAR

The Minerva Calendar and the Periodic Fertility of Women. By the Inventor, A. C. Cilliers, M.Sc., Ph.D., Professor of Physics, Stellenbosch. (Pp. 47, with 15 illustrations. Minerva Calendar complete with booklet, £7 7s. Booklet: 5s.) Johannesburg: Westdene Products (Pty.) Limited.

Contents: I: The Ogino-Knaus Theory of the Periodic Fertility of Women. 1. Aristotle's Doctrine of Spontaneous Generation. 2. The Cellular Theory of Reproduction. 3. Science Solves a Moral Problem. 4. Modern Advance in our Knowledge of Eggs, Sperms, and the Problem of Fertilisation. 5. The Periodic Fertility of Women. 6. The Minerva Calendar.

II: Medical Science and the Ogino-Knaus Theory.

III: The Church and the Ogino-Knaus Method.

IV. The Minerva Calendar. 1. The Strip-Calendar. 2. The Cycle-Chart. 3. The Double Slide.

V: Directions for the Use of the Minerva Calendar. (a) The Menstrual Cycle. (b) Setting the Calendar for Use. (c) Precautions in Using the Calendar. (d) An Appeal to Users of the Minerva Calendar.

This booklet is issued with, and must be considered as an adjunct to, the Minerva Calendar itself, a recording and calculating device to be used by women applying the Ogino-Knaus theory of periodic fertility. The scope of the booklet is sufficiently indicated by the summary of contents.

Professor Cilliers is well known in South Africa for his wide interests, but to the uninitiated his present venture into the field of reproductive physiology might well appear passing strange. To the initiated, however, the explanation is very simple. In 1938 he derived a law of growth for trees in plantations. In 1945 he found that this law was applicable to all sorts of organic aggregates. As a result of his studies he published *Life on the Sigmoid* in 1946, an ambitious work which he called an essay in bio-politics. It was a reformulation of the Malthusian theory in the light of modern conditions. In Professor Cilliers' view the Malthusian devil of over-population has at last caught up with man's exploitation of the earth's crust as his source of nutrition, and it is time that State and Church openly recognized this fact.

The Minerva Calendar, as a means of regulating and spacing family offspring in a way that will not offend moral and

religious scruples, is the direct outcome of his studies in connexion with the indiscriminate growth of populations in South Africa as well as elsewhere. The present booklet should, therefore, be regarded as the natural supplement to his *Life on the Sigmoid*.

The little booklet can be commended to all who take either a personal or a more general interest in the pressing modern problem of family regulation. It sets out clearly in non-technical terms the whole theory of reproduction for the lay reader, and deserves a wide circulation. The intelligent reader will be struck by the uniqueness of the author's approach to a delicate and difficult subject, and impressed by the high moral purpose and tone permeating the work from the beginning to end. The author deserves every credit for lifting the problem of reproduction and family regulation to such a high scientific and moral plane.

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The investigation of the nose and the nasal sinuses from the angle of the cytological examination of the secretions, a much neglected procedure, is very well dealt with. The short sightedness of viewing separately the upper from the lower respiratory tract in respiratory allergy is stressed. 'Indication for surgical interference in the nose and paranasal sinuses should be based on existing pathological changes and regardless of whether bronchial asthma is or is not present.' 'The indications for tonsillectomy in children with nasal allergy should be the same as in those without nasal allergy.' The reviewer agrees heartily.

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I wonder if by decreasing the support or pressure of brassieres, we could not thus encourage our mothers to feed their babies more successfully.

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African Life Buildings,
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Arrangements are being made to provide facilities for laboratory diagnosis of this disease at this Institute in the near future.

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Deputy Director.

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28 January 1952.

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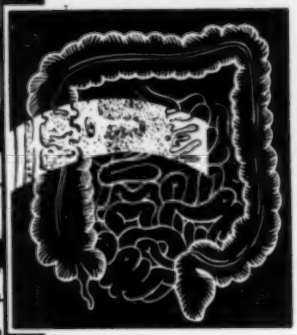

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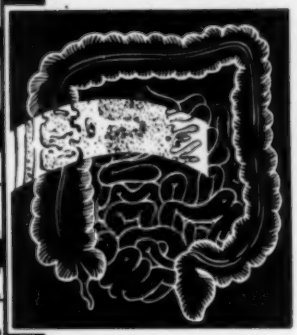

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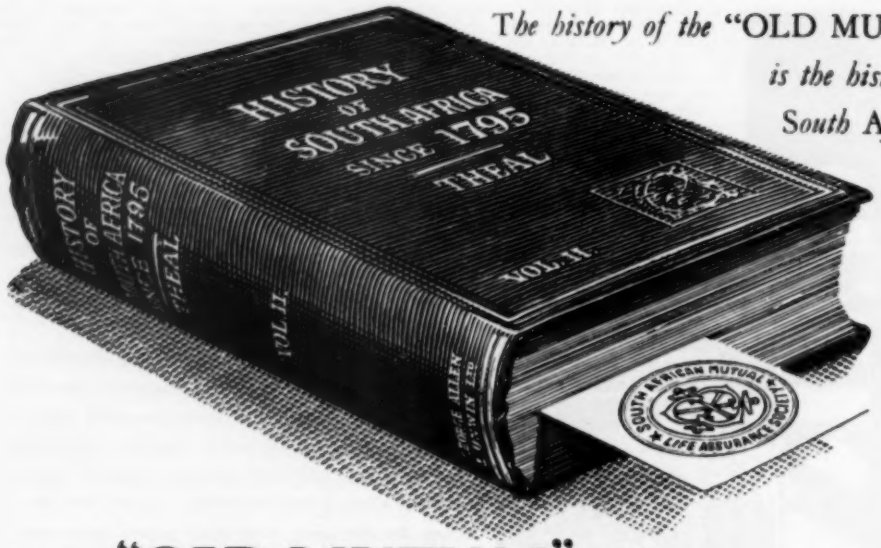

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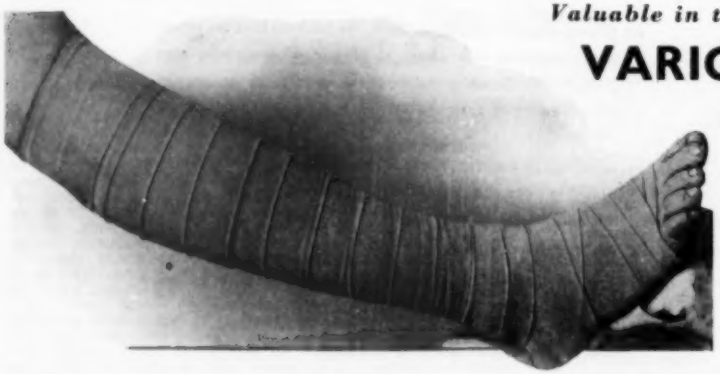

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PRAKTYKE TE KOOP : PRACTICES FOR SALE

(673) Natal. Average gross receipt £1,650 p.a. Prescribing. Premium required £1,275. One appointment £200 p.a. Good scope for expansion. Double-storied seven-roomed house situated on 1½ acres and separate surgery building for sale at £6,500. Surgery may possibly be rented by arrangement at approx. £8 p.m. Picturesque surroundings. Climate notably cooler than that of the coast.

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(350) Eastern Cape hospital town. Total gross receipts preceding 13 months, £3,700. One appointment. Premium £1,500. House for sale at £3,000. Large bond available. £700 rebate if appointment not transferred. Practice offers great scope for practitioner with surgical ability.

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(811) Partnership share in Cape or Natal in predominantly English-speaking practice with min. net income £2,500 p.a.

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(951) Cape Town, seaside suburb. Experienced gentile as locum in partnership practice from early March for 6 months or longer.

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(969) Lady doctor, qualified Cape Town 1950, immediately available as locum or assistant in Port Elizabeth and vicinity.

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(Pr/S37) O-Tvl. Groeiende dorp en 'n groeiende praktyk. Medisyne word aangemaak. Huis te huur teen £10 p.m. Jaarlikse inkomste £2,250. Premie £400 en sluit sekere apteekameublement en medisyne in.

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(DL2) From 8 May to 31 May. Single male preferred. Locum must possess his own car and be prepared to live in principal's flat at Wentworth. General practice with consulting rooms in Durban.

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For 6 to 8 weeks (8 weeks preferred) either April–May or May–June. Travelling expenses paid either by air, train or car. Not essential to have own car, one can be provided. Very little travelling and night work. £3 3s. per day and all found. Reply to 'A. K. Y.', P.O. Box 643, Cape Town.

Rooms to Share

An ophthalmic surgeon occupying 2 fully furnished rooms, consisting of waiting room and consulting room in St. George's Street, Cape Town, wishes to share them. For further particulars write to 'A. L. A.', P.O. Box 643, Cape Town.

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Transvaal Provincial Administration

VACANCIES: TRANSVAAL PROVINCIAL HOSPITALS

Applications are invited from suitably qualified candidates for the undermentioned posts at Public Hospitals in the Transvaal.

Applications should be addressed to the Medical Superintendents of the Hospitals concerned, and should contain full particulars as to the age, professional, academic and language qualifications, experience and conjugal status of the applicant and should further indicate the earliest date upon which duties can be assumed. Copies, only, of recent testimonials to be attached.

Hospital	*Vacant Post*	*Emoluments*	*Remarks*
Far East Rand, P.O. New State Areas	Casualty Officers (2)	£600 p.a.	Must be a registered medical practitioner. Married plus (*a*) and (*c*) below. Single plus (*b*) below.
Johannesburg	*Hospital Board and the University of the Witwatersrand*		
	Medical Registrar (1)	£620, 780, 820, 860	Must be a registered medical practitioner of two years' standing. Married plus (*a*) below. Single plus (*b*) below.
	Surgical Registrar (1)	£620, 780, 820, 860	Must be a registered medical practitioner of two years' standing. Married plus (*a*) below. Single plus (*b*) below.
Pietersburg	Medical Registrar (1)	£620, 780, 820, 860	Married plus (*a*) below. Single plus (*b*) below.
Pretoria	Clinical Assistants (Department of Medicine) (3)	£620, 780, 820, 860	Must be a registered medical practitioner to assume duty on 1 April, 1952, 1 May, 1952 and 1 July, 1952, respectively. Married plus (*a*) below. Single plus (*b*) below.
	Casualty Officers (2)	£620, 780, 820, 860	Must be registered medical practitioners. Married plus (*a*) and (*c*) below. Single plus (*b*) below.
	Clinical Assistant (Department of Ophthalmology) (1)	£620, 780, 820, 860	Must be a registered medical practitioner. Married plus (*a*) below. Single plus (*b*) below.
	Clinical Assistants (Department of Anaesthetics) (2)	£620, 780, 820, 860	Must be a registered medical practitioner. Married plus (*a*) below. Single plus (*b*) below.

(*a*) £256 per annum cost-of-living allowance.
(*b*) £80 per annum cost-of-living allowance.
(*c*) £60 per annum temporary allowance.

Full-time employees receive, in addition to their salaries and cost-of-living allowance, the following privileges: Leave and rail concession.

Closing date of applications: 8 March 1952.

Application forms are obtainable from the Provincial Secretary, Hospital Services Branch, P.O. Box 383, Pretoria.

(33860)

Departement van Gesondheid

VAKATURE VIR MEDIESE BEAMPTE (VOEDINGSLEER): GESONDHEIDSINSTITUUT VIR GESIN EN SAMELEWING, DURBAN

Aansoeke om aanstelling in bogenoemde pos in die Gesondheidsentrumdiens in die Unie-departement van Gesondheid word ingewag.

Van die suksesvolle kandidaat sal verwag word om deel te neem aan die opleiding van verskeie kategorieë personeel en om behulpsaam te wees met ondersoeke wat by die inrigting gedoen word, sowel as met die diens wat gelewer word deur die gesondheidsentrums wat in verband met die inrigting staan.

Die suksesvolle kandidaat sal in die eerste plek vir 'n tydperk van twee jaar op kontrak en op die salarisskaal £720 × 30—£900 × 40—£1,020 aangestel word.

Die suksesvolle kandidaat sal erkenning ontvang vir vorige ondervinding as mediese praktisyn, en die aanvangsalaris sal bepaal word op grondslag van een kerf op bogemelde skaal vir elke voltooide jaar ondervinding as mediese praktisyn; een ekstra kerf sal ook toegestaan word in gevalle waar die kandidaat in besit is van die Diploma in Volksgesondheid en/of die Diploma in Tropiese Medisyne en Higiëne (die jaar gewy aan studie vir 'n diploma word nie ook as 'n jaar se ondervinding as mediese praktisyn gereken nie), met dié voorbehoud dat die maksimum aanvangsalaris nie meer as £900 per jaar bedra nie. Kandidate moet skriftelike bewys van vorige ondervinding lewer.

Benewens gemelde salaris, word 'n lewenskostetoelae betaal teen die skaal wat op amptenare in die Staatsdiens van toepassing is; die toelae beloop tans £256 per jaar in die geval van getroude amptenare en £80 per jaar in die geval van ongetroude amptenare.

Kandidate moet—

(a) as mediese praktisyns by die Suid-Afrikaanse Mediese en Tandheelkundige Raad geregistreer wees;

(b) Suid-Afrikaanse burgers of burgers van 'n Statebondsland of die Republiek Ierland wees;

(c) tweetalig wees; en

(d) vir 'n tydperk van minstens drie jaar in die Unie van Suid-Afrika of in Suidwes-Afrika gewoon het.

Die suksesvolle kandidaat sal nie toegelaat word om privaat te praktiseer nie en sal 'n bevredigende geboorte- en gesondheidsertifikaat moet indien.

Aansoeke, vergesel van afskrifte van getuigskrifte, moet in tweevoud op die voorgeskrewe vorms (Z.83 en S.D.K.8) wat by die Sekretaris van Gesondheid, Posbus 386, Pretoria, verkrygbaar is, ingedien word en moet die kantoor van genoemde amptenaar voor of op 15 Maart 1952 bereik. (33743)

University of the Witwatersrand, Johannesburg

LECTURERS IN THE DEPARTMENT OF ANATOMY

Applications are invited for appointment to two posts of full-time lecturer on the permanent staff of the Department of Anatomy.

The salary scale attached to the appointment is £550 × 25—£800, plus a cost-of-living allowance which amounts to £208 per annum in the case of a married man or a single person with dependants, and £109 per annum in the case of others. A higher initial salary may be paid and a candidate who considers that his experience and qualifications warrant an initial salary above the minimum of the scale should state accordingly in his letter of application.

The duties involve the teaching of Gross Anatomy and/or Microscopic Anatomy and Embryology to undergraduate Medical, Dental and Science students. Applicants need not be medically qualified and those with good qualifications and teaching experience in fundamental sciences, such as Zoology and Comparative Anatomy, will also be considered.

Duties are to be assumed as soon as possible.

Applications must be lodged with the Registrar of the University, Milner Park, Johannesburg, not later than 7 April 1952.

(A.9 S3/4)
(F.8444)

Provincial Administration of the Cape of Good Hope

HOSPITALS DEPARTMENT

VACANCY: MEDICAL PRACTITIONER, GRADE A: SIR HENRY ELLIOT HOSPITAL, UMTATA

Applications are invited from registered medical practitioners for appointment to the abovementioned post on the staff of the Sir Henry Elliot Hospital, Umtata, for a contract period not exceeding four years. The salary scale applicable to the post is £500—600—660—£720 per annum plus a temporary cost-of-living allowance at rates prescribed from time to time by the Administrator.

The conditions of service are the same as those prescribed in respect of corresponding posts in the Hospital Board Service in terms of the Hospital Board Service Ordinance, 1941, and the regulations framed thereunder. The appointment will be terminable at any time by the tendering of ninety days' notice on either side.

Applications must be made on the prescribed form (Staff 23) which is obtainable from the undersigned or from the offices of any Provincial Hospital or School Board in the Province. Completed application forms should be addressed to the Medical Superintendent and the closing date for receipt of applications will be noon on Friday, 29 February 1952.

Candidates must state the earliest date on which they can assume duty.

G. W. Jarmain
Branch Representative
(O 1171)

P.O. Box 202
Umtata
5 February 1952

Departement van Gesondheid

VAKATURES VIR BESOEKENDE MEDIESE BEAMPTE (DEELTYDS) EN PSIGIATER (DEELTYDS): KING GEORGE V-HOSPITAAL, DURBAN

Aansoeke om aanstelling in ondergenoemde poste in die personeel van die King George V-hospitaal, Durban, word van behoorlik gekwalifiseerde kandidate ingewag.

Pos	*Honorarium aan pos verbonde*
(a) Narkotiseur	£600 per jaar (vasgestel).
(b) Psigiater	£600 per jaar (vasgestel).

Kandidate moet Suid-Afrikaanse burgers of burgers van 'n Statebondsland of die Republiek Ierland en tweetalig wees en moet minstens drie jaar in die Unie van Suid-Afrika of Suidwes-Afrika gewoon het.

Registrasie by die Suid-Afrikaanse Mediese en Tandheelkundige Raad as 'n spesialis in die besondere spesialiteit is 'n noodsaaklike vereiste vir aanstelling in enigeen van die poste.

Van die aangestelde persone sal verwag word om saam te werk in alle navorsing wat met hul spesialiteite in verband staan en om, waar moontlik, personeelsamesprekings by te woon.

Nadere besonderhede in verband met hierdie voorgenome aanstellings is van die Mediese Superintendent van die betrokke hospitaal verkrygbaar.

Daar moet aansoek gedoen word op die voorgeskrewe vorms (Z.83 en S.D.K.8) wat van die Sekretaris van Gesondheid, Posbus 386, Pretoria, verkrygbaar is.

Die sluitingsdatum vir die ontvangs van aansoeke is 15 Maart 1952. (33796)

Bute Heuningvlei Asbestos Ltd.

Applications are invited from medical practitioners for appointment as part-time Medical Officer to the above Company, to commence duties as from 15 March 1952. Full information regarding the appointment may be obtained from the Manager, c/o Frylinck & Walker, P.O. Box 26, Vryburg. Applications must be submitted before 7 March 1952 together with copies of two testimonials.

City of Bulawayo

VACANCY FOR DEPUTY MEDICAL OFFICER OF HEALTH

Applications will be received by the undersigned up to noon on Saturday, 5 April 1952, for the above position, which is on the salary grade £1,344 × 80—£1,744 per annum, plus at present a cost-of-living allowance at the rate of approximately £149 per annum on the minimum of the above grade, rising with annual increments to approximately £193 per annum on the maximum of the grade, together with children's allowances, if applicable, at the rate of £30 per annum for the first child and £24 per annum for each of the second and third children.

The duties will be generally to assist the Medical Officer of Health with the administration of public health matters, and the medical and health services undertaken by the Municipality, which include a European Infectious Diseases Hospital, Native Venereal Diseases and Infectious Diseases Hospitals and Clinics for all sections of the people, and such other health services as may be undertaken by the Council from time to time. Applicants must give full particulars of medical degrees and be in possession of the Diploma of Public Health.

The successful applicant will be required to provide himself with a motor-car and to use it in the course of his duties. A transport allowance at such rate as may be decided by the Council from time to time will be paid and at the moment this is fixed at a rate of £15 15s. a month.

Applicants should state age, whether married or single, and earliest date on which duties could be commenced. Details of qualifications and a summary of training and previous experience should also be furnished, together with *copies* of not more than three recent testimonials and a medical certificate of fitness.

The successful applicant will be required to serve a probationary period of 12 months and thereafter, in the event of his being confirmed in the position, he will be required to apply for membership of the Southern Rhodesia Local Authorities Joint Pension Fund, or any other pension fund which may be in force at that time and in respect of which Municipal employees are required to become members.

Applicants who canvass Councillors will be disqualified.

H. J. Cook
Town Clerk

Advert. No. 2283
15 February 1952

Public Service Commission

VACANCIES IN THE PUBLIC SERVICE

1. The attention of medical practitioners, registered with the South African Medical and Dental Council, is drawn to an advertisement appearing in the *Government* and *Provincial Gazettes* of this week, inviting applications for the undermentioned posts:

Post	*Department/ Administration*	*Salary Scale* £
Chief Medical Inspector of Schools	Natal Provincial Administration (Education Department, Pietermaritzburg)	1,100 × 50—1,250
Medical Officer (Leprosy Research)	Health (Westfort Institution, Pretoria)	960 × 40—1,080, plus quarters
Dentist	Health (Head Office, Pretoria)	840 × 30—960

2. In addition to salary a cost-of-living allowance at the rate of £256 per annum (married) and £80 per annum (single) is payable at present.

3. It is emphasized that full and detailed particulars of qualifications and previous experience (including military service) must be furnished, but original certificates and testimonials should not be submitted. Application forms Z.83 and P.S.C. 8 *(a)* are obtainable from the Secretary, Public Service Commission, Pretoria, to whom filled-in forms must be addressed.

4. The salary scales attaching to the abovementioned posts are under review. Revised and probably improved scales wil be announced in due course.

5. The closing date for the receipt of applications is 22 March 1952. (33929)

Transvaal Education Department

SCHOOL MEDICAL SERVICE: TWO VACANCIES

Applications are invited for two part-time medical officers at the School Clinic, Johannesburg.

Applicants must be bilingual Union citizens with at least three years' residence in South Africa, and must be registered with the S.A. Medical Council. Experience in children's diseases will be a recommendation.

The salary attached to each of these posts is paid monthly on a scale of £170 per annum. The appointments are part-time, and each of the successful applicants will be required to perform four hours' duty per week at the Johannesburg School Clinic by arrangement with the local Medical Inspector of Schools. Services may be terminated by one month's notice on either side. The incumbent must supply a suitable locum when necessary as no leave is attached to the post.

Applications stating full particulars of qualifications, age and experience must reach the Chief Medical Inspector of Schools, P.O. Box 768, Pretoria, not later than 20 March 1952.

33922

Transvaalse Onderwysdepartement

SKOOLGENEESKUNDIGE DIENS

Applikasies word gevra vir die betrekking van twee deeltydse geneeshere aan die Skoolkliniek, Johannesburg.

Applikante moet tweetalige Unie-burgers wees, minstens drie jaar in Suid-Afrika woonagtig en moet by die S.A. Geneeskundige Raad geregistreer wees. Ervaring in kindergeneeskunde sal 'n aanbeveling wees.

Die salaris verbonde aan elke pos word maandeliks op 'n skaal van £170 per jaar betaal. Die aanstelling is deeltyds en die suksesvolle applikante sal elk 4 uur diens per week by die Johannesburgse Skoolkliniek in oorleg met die plaaslike Geneeskundige Inspekteur van Skole moet verrig. Die diens kan met 'n maand wedersydse kennisgewing beëindig word. Die bekleër van die betrekking moet wanneer dit nodig is, 'n aanneembare plaasvervanger verskaf; daar is geen verlof aan die betrekkings verbonde nie.

Applikasies met volle besonderhede betreffende kwalifikasies, ouderdom en ervaring moet die Geneeskundige Hoofinspekteur van Skole, Posbus 768, Pretoria, nie later as 20 Maart 1952 bereik nie.

33922

Meyerton Health Committee

PART-TIME MEDICAL OFFICER

Applications are invited for the position of part-time medical officer to the Meyerton Native Location at a salary of £35 p.m. month.

Duties will include two visits of four hours each per week to the Location Clinic for medical and preventive treatment.

Applications should be submitted to the undersigned on or before 24 March 1952.

J. B. Saunderson
Secretary
98/52

P.O. Box 9
Meyerton
Transvaal

E.N.T. Outfit

Retiring E.N.T. Surgeon offers at bargain price complete set of E.N.T. instruments and apparatus, including electric ear masseur, electric pharyngoscope, Haslinger bronchoscope and oesophagoscope (Vienna), audiometer (Pillings, Philadelphia), bougies, dilators, etc. Five-shelved white enamelled instrument cabinet, etc. Original cost over £600. Bargain at £300. Apply 'E.N.T.', P.O. Box 209, Maritzburg, Natal.

For Sale

Electrocardiograph. Portable Sanborne Cardiette. In perfect condition and with spare Cassette. Price £130 or near offer. For particulars phone 2-9275, Cape Town.

Provincial Administration of the Cape of Good Hope

HOSPITALS DEPARTMENT

HONORARY APPOINTMENT

Applications are invited from registered medical practitioners for the following post:

Honorary Senior Surgeon at the Cape Town Free Dispensary.

The appointment will be for 5 years, but may be terminable before the end of that period if and when the medical staffing of the hospitals is reorganized.

Candidates are requested to state whether, in the event of a member of the staff being promoted, they wish their applications to be considered for the resultant vacancy.

Applications containing particulars of age, qualifications, experience, etc., with copies of recent testimonials, should be forwarded to the undersigned by noon on Saturday, 22 March 1952.

I. P. Walton
Acting Branch Representative
27031

Hospitals Department
Industry Building
58 Loop Street
Cape Town

University of the Witwatersrand, Johannesburg

ORAL AND DENTAL HOSPITAL

Applications are invited for the appointment of Visiting Anaesthetist at the above hospital. The duties involve attendance at the hospital on one morning each week from 8 a.m. to 10 a.m. An honorarium of £150 p.a. is attached to the appointment.

Applications for the appointment and for further information should be addressed to the undersigned.

F. M. Botha
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